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THE BULLETIN OF ZOOLOGICAL NOMENCLATURE

The Official Organ of

THE INTERNATIONAL COMMISSION ON ZOOLOGICAL NOMENCLATURE

VOLUME 7

Edited by

FRANCIS HEMMING, C.M.G., C.B.E.

Secretary to the International Commission on Zoological Nomenclature

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1952

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Vice-President : Senhor Dr. Afranio do Amaral (Brazil)

Secretary : Mr. Francis Hemming (United Kingdom)

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(Arranged in order of precedence by reference to date of election or of most recent re-election, as prescribed by the International Congress of Zoology)

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BULLETIN OF ZOOLOGICAL NOMENCLATURE

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25th February, 1952

SEVEN PROBLEMS OF ZOOLOGICAL NOMENCLATURE INVOLVING THE CLARIFICATION, AMENDMENT OR EXPANSION OF THE "RÈGLES INTERNATIONALES" WHICH WILL BE CONSIDERED BY THE FOURTEENTH INTERNATIONAL CONGRESS OF ZOOLOGY, COPEN- HAGEN, 1953: PRELIMINARY APPEAL TO ZOOLOGISTS FOR ADVICE

By FRANCIS HEMMING, C.M.G., C.B.E.

(Secretary to the International Commission on Zoological Nomenclature)

1. The present introductory note is intended to draw the attention of zoologists to seven problems of zoological nomenclature that are at present under consideration and on which it will be the duty of the International Commission on Zoological Nomenclature to submit definite proposals to the Fourteenth International Congress of Zoology when it meets in Copenhagen in 1953. These problems, each of which involves the clarification, amendment or expansion of the *Règles Internationales*, were considered in a preliminary fashion in Paris in 1948 both by the International Commission and by the Thirteenth International Congress of Zoology. No decisions were then taken on these matters, for it was felt that further study of the problems involved was desirable before definitive decisions were reached. It was accordingly then decided that, as Secretary to the Commission, I should make a further study, in consultation with interested zoologists and palaeontologists, of current views and practice in these matters, and that in the light of these consultations I should furnish Reports on these problems with concrete recommendations for consideration and decision at Copenhagen in 1953.

2. The seven problems involved are the following :—

- (1) The reform of Article 19 of the *Règles* relating to the conditions in which emendations of scientific names should be made or accepted (Commission's reference Z.N.(S.)356) ;

- (2) The substitution for the existing Articles 4 and 5 of the *Règles* of comprehensive provisions relating to the naming of Families (including Super-Families) and supra-generic categories of lower rank (Commission's reference Z.N.(S.)357);
- (3) The possible addition to the *Règles* of provisions governing the naming of Orders and higher taxonomic categories (Commission's reference Z.N.(S.)360);
- (4) The species to be accepted as the type species of a nominal genus, the name of which was first published in a generic synonymy (Commission's reference Z.N.(S.)387);
- (5) The application of a trivial name which, when first published, is applied to a particular species or specimen but which is stated also to be a substitute name for some previously published name (Commission's reference Z.N.(S.)361);
- (6) The question of whether, and subject to what conditions, the concept of a "neotype" should be officially recognised in the *Règles* (Commission's reference Z.N.(S.)358);
- (7) The problem of securing stability in zoological nomenclature (Commission's reference Z.N.(S.)359).

3. In the period which has elapsed since the duty of preparing Reports on the foregoing subjects was entrusted to me, I have sought, as a first step, to collect all statements on these questions which have so far been published in any quarter, in order thereby to assemble the various issues involved on which decisions will need to be taken by the Commission and the Congress when dealing with these problems. With the same object in view I have taken every opportunity that has offered for obtaining opinions from interested specialists, either by personal discussion or by correspondence. As the result of this examination of the literature and of these preliminary discussions, a stage has, I think, been reached when it is possible to initiate the main consultation with specialists by putting before them the issues which appear to call for decision and by seeking their assistance and advice on the action which it is desirable should be taken by the Copenhagen Congress in 1953. In August this year (1951) I took the opportunity presented by the meeting in Amsterdam of the Ninth International Congress of Entomology to place before that representative gathering of entomologists the issues which, as it seemed to me, were involved in the seven problems which I had been charged to investigate, and to seek their assistance and advice on those problems.

4. I feel that the stage has now been reached when it is desirable to seek the widest possible measure of general consultation, and for this purpose, I have prepared a note in regard to each of the problems on which I have been instructed to report, in which I set out the problems which appear to call for attention and, in some cases, put forward suggestions as to the solutions which might be adopted. The papers so prepared are being published in the *Bulletin of Zoological Nomenclature* immediately after the present introductory note.

5. I now earnestly appeal to zoologists and palaeontologists generally to study the seven problems remitted by the Paris Congress for decision by the Copenhagen Congress two years' hence and to join in the search for solutions of those problems which will at once be the most practicable and the most acceptable to the general body of workers in zoology and in the fields of applied biology. I hope very much that all Nomenclature Committees of Museums and other Scientific Institutions which receive copies of the papers now to be published will take into serious consideration the issues raised by these problems, and, having done so, will furnish statements setting out the views of their members on the questions enumerated in the papers which I have prepared and also on any other issues raised by these problems, to which, in their opinion, consideration ought to be given. I make a similar appeal to every individual zoologist and palaeontologist who may read the present paper and who is interested in any of the problems here discussed. In order that the Reports on these subjects may not only be completed but also published in the *Bulletin of Zoological Nomenclature* well in advance of the meeting of the International Congress of Zoology at Copenhagen in 1953, Nomenclature Committees and individual specialists who respond to the present appeal will be rendering a doubly valuable service if they will be so kind as let the International Commission have their comments at latest by 30th June, 1952.

6. Further, it is particularly requested that, in order to save time on the receipt of communications in the Office of the Commission (having regard to the fact that it possesses no whole-time clerical or typing staff), Nomenclature Committees and individual specialists who respond to the present appeal will be good enough to prepare separate statements on each of the problems on which they may decide to comment and should clearly affix to each statement the Commission's Reference Number as cited in paragraph 2 of the present appeal. Finally, much time and unnecessary expense will be saved if Nomenclature Committees and individual specialists will be good enough to send their comments in duplicate, in typescript, and typed on one side of the paper only.

7. All communications to the Commission prepared in response to the present appeal should be addressed to myself, as Secretary to the Commission (address: 28 Park Village East, Regent's Park, London, N.W.1, England).

THE EMENDATION OF ZOOLOGICAL NAMES: AN APPEAL TO ZOOLOGISTS FOR ADVICE

By FRANCIS HEMMING, C.M.G., C.B.E.

(Secretary to the International Commission on Zoological Nomenclature)

(Commission's reference Z.N.(S.)356)

(For the decision by the Thirteenth International Congress of Zoology that an investigation should be made in regard to this subject, see 1950, *Bull. zool. Nomencl.* 4: 141)

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PART I. GENERAL CONSIDERATIONS

(a) The historical background

1. Historical analysis: Ever since the adoption of the *Règles* fifty years ago Article 19 has proved one of the most difficult of all the Articles comprised in it to interpret. This difficulty has been felt by individual specialists and by the International Commission alike. Individual specialists have interpreted this Article in a quite extraordinary variety of ways, some adopting an attitude of such extreme rigidity as made it possible for them to reject almost every emendation suggested by other workers, while at the other end of the scale specialists who were also Latin and Greek scholars of distinction interpreted this Article as justifying—and, indeed, calling for—emendations of so far-reaching a kind as in effect to constitute the rejection of the original name on the ground that it was incorrectly formed and the substitution for it of a name which, though faultless from the standpoint of the Classical Languages, differed so substantially from the name, as originally published, as virtually to constitute a new name. Between these two extreme schools of thought, each of which had the merit that it stood for a clearly defined and logically defensible point of view, there was at all times a great mass of workers whose attitude towards the problem of the emendation of names was not based upon any general principle but was apparently dictated mainly by considerations of convenience and habit. Nor is the International Commission itself able to claim that in every one of the eight *Opinions* (*Opinions* 26, 27, 29, 36, 41, 60, 61, and 63) in which it has given interpretations of Article 19 in relation to individual cases it has adopted a consistent line of policy. For it cannot be questioned that the rulings given in some of these *Opinions* are irreconcilable with those given in others. It must be admitted therefore that Article 19 in its present form has been a complete failure and has probably actually contributed to, rather than lessened, the difficulties which inevitably arise in dealing with so complex a subject as the conditions in which the emendation of names should be either permitted or required.

2. Action taken in Paris in 1948 by the International Commission on Zoological Nomenclature and by the International Congress of Zoology: It will be readily appreciated that in the circumstances described above both the International Commission on Zoological Nomenclature and the International Congress of Zoology were in considerable difficulty when in Paris in 1948 those bodies came to consider Article 19 of the *Règles* and the interpretative *Opinions* which had been rendered in regard to it in relation to individual cases. In the first place the Commission had received, but had been unable adequately to consider, suggestions for the amendment of Article 19 in various respects; second, it was necessary to reach at least some provisional conclusions regarding the interpretations of this Article in previous *Opinions*, having regard to the decision which it had already taken to recommend the Congress to incorporate into the *Règles* all such interpretations, subject to the clarification or amendment of those interpretations where this was judged to be necessary. In the case of Article 19, the Commission recommended, and the Congress approved, a twofold line of action. First, the whole question of the provisions which in the long-term should regulate the emendation of names was remitted to myself, as Secretary to the Commission, for investigation

in consultation with interested specialists with a view to the submission of a comprehensive Report to the next (Copenhagen) Congress in 1953. Second, it was necessary for the Commission and the Congress to devise some provisional scheme for regulating the emendation of names, pending the adoption five years later of a permanent scheme by the Copenhagen Congress, for some temporary arrangement was clearly necessary for the purpose of removing the worst of the ambiguities which then attached to the interpretation of Article 19. The Commission accordingly recommended, and the Congress agreed to read into the foregoing Article the substance of the rulings given in *Opinions* 27, 36, 41, 60, and 61, together with a modified version of the ruling (in regard to the meaning of the word "évident" given in *Opinion* 26, 1950, *Bull. zool. Nomencl.* 4: 142-144). Particular care was taken to make it clear that these decisions were to be regarded as being of an interim character only, it being expressly stated in the preamble to these decisions (*loc. cit.* 4: 142, line 1) that they were "without prejudice to" the findings to be reached in the light of the present investigation. We are free, therefore, in approaching the question of the provisions relating to the emendation of names to be inserted in the *Règles* in place of the existing Article 19, to regard ourselves as entirely untrammelled by governing decisions of any kind.

3. Relationship of Article 19 to other Articles relating to the formation and orthography of names: Prior to the Paris Congress of 1948 those zoologists who desired to see the fewest possible changes in the original spelling of names occasionally advanced the view that Article 19 must be regarded as in some way superior to, and of greater force than, other Articles relating to the formation and orthography of names. Those who advanced this view claimed therefore that, if an author, when publishing a new name, contravened any of the provisions of Articles 14, 15, 16, 18, and 20, the contravention so committed was afforded protection by Article 19 unless it was "évident" that the contravention in question was attributable to one or other of the three causes specified in the last-named Article. Since it is in the nature of the case hardly ever possible to establish such a proposition, the effect of this argument, if validly based, would have been to perpetuate every error committed in breach of any of the five Articles cited above. Against this argument was advanced the view that there was no justification for claiming that one Article was superior to another, the only distinction between different parts of the *Règles* being between the mandatory provisions embodied in the "Articles" and the non-mandatory provisions embodied in the "Recommendations." Accordingly, those who held this view were of the opinion that the provisions contained in the five Articles cited above were entirely independent and self-contained, being in no respect connected with, or dependent upon, Article 19. This matter was considered by the International Commission at the Fourth Meeting of its Paris Session in 1948 when it agreed to submit a recommendation—which was subsequently approved by the Congress—that words should be inserted in the *Règles* to make it clear that, "where a name is published in a form or in a manner which contravenes any of the provisions contained in Articles 14-16, 18, or 20, the error so committed is automatically to be corrected by subsequent authors" (1950, *Bull. zool. Nomencl.* 4: 68). It will be noted that this decision not only entirely disposes

of the contention that Article 19 was in some way superior to the Articles cited above, but draws a sharp distinction between (a) names which are erroneously formed by reason of not being in accord with one or other of the five Articles cited above and (b) names which are erroneously formed for other reasons, the former names, it was decided, being subject to automatic "correction," the latter to "emendation" under the processes prescribed by Article 19. In view of the foregoing decision, we see that the provisions in the five Articles referred to above are irrelevant to, and therefore fall outside the scope of, the present investigation of the problems relating to the emendation of names dealt with in Article 19.

4. Relationship of Article 19 (emendation of names) to Article 32 (rejection of names): In the preceding paragraph we considered have an argument which prior to 1948 was sometimes advanced by those workers who favoured the maintenance wherever possible of the original spelling of names, even when that spelling contravened other Articles in the *Règles*, and have noted the rejection of this contention by the Paris Congress. We must now consider for a moment another argument sometimes advanced by workers of the same school of thought, which, though having the same object as the argument referred to above, was entirely inconsistent with that argument. Under the first argument Article 19 was to be regarded as superior to other Articles relating to the formation and orthography of names; under the second argument Article 19 itself, it was claimed, was subordinate to, and governed by, Article 32; this argument was based upon the appearance in Article 32 of the words: "Un nom . . . , une fois publié, ne peut plus être rejeté . . ." ("A name . . . once published, cannot be rejected . . .") This argument was equivalent to a contention that Article 19 had been inserted in the *Règles* through some oversight, for, owing to the superior force of Article 32, it could never be applied. Those who rejected this claim were quick to point out that, while it was true that the words quoted above did appear in Article 32, it was quite incorrect to drag them out of their context in this way, for in that context these words were strictly limited by the words "pour cause d'impropriété" ("because of inappropriateness"); the Article read in its entirety lent no colour at all, in the view of these workers, to the contention that this Article was superior to, and in fact nullified, Article 19. This matter was considered by the International Commission at the Ninth Meeting during its Paris Session in 1948, when it was agreed to submit a recommendation—which was subsequently approved by the Congress—that words should be inserted in the *Règles* "to ensure the co-ordination of Articles 19 and 32 by making it clear that nothing in the last-named Article detracts from the generality of the provisions of Article 19" (1950, *Bull. zool. Nomencl.* **4**: 263). In view of this decision, we need not detain ourselves further with the argument described above.

(b) General considerations

5. Need for the substitution of objective, for the present subjective, tests prescribed for determining the circumstances in which a scientific name is to be emended: In its revision of the *Règles* the Thirteenth

International Congress of Zoology in 1948 was at pains to remove provisions which depended for their interpretation upon subjective judgments reached by persons seeking to apply the *Règles*, substituting for such provisions others depending upon ascertainable objective facts. For example, up to the Paris Congress it was not clear what species should be accepted as the type species of a given nominal genus where on taxonomic grounds it appeared that the author who had selected that species to be the type species had himself misidentified the species which he had in mind and had applied to it the name of some other species. In consequence some authors had till then accepted as the type species of such a genus the species actually cited by name, while others had so accepted the species which they believed the original author had in fact intended to select. It was apparent that, if subjective taxonomic judgments on the identity of the species referred to by a given author when selecting a species to be the type species of a genus were to be permitted in interpreting Article 36, it would be impossible ever to determine beyond possibility of dispute what species should be accepted as the type species of any genus. In this as in similar cases the difficulty was overcome by the decision taken by the Congress (on the recommendation of the Commission) to insert in the *Règles* a purely objective test (1950, *Bull. zool. Nomencl.* 4: 158-159). Applying the foregoing principle to the provisions to be prescribed for regulating the emendation of names, we see at once that in its present form Article 19 is seriously defective, for instead of prescribing the conditions in which a name is to be emended it lays down that the original orthography of a name is to be preserved, save in one set of subjective circumstances, namely when it is "évident" that any one of three specified errors is comprised in the original spelling. Such a provision is clearly incapable of securing stability in this field of zoological nomenclature, for inevitably what is "évident" to one worker will not always be so to another. For this reason alone, it is no matter for surprise that Article 19 has failed to provide definite answers in disputed cases; nor indeed is it surprising that much time and ingenuity has been dissipated in fruitless arguments as to the conditions which should be present in any given case before the existence of any of the three specified types of error should be accepted as being "évident." No one will, I think, dispute the proposition that, whatever provisions it may be decided to insert in place of the existing Article 19, those provisions should at least be linked to objective facts and should not be dependent (as is the present Article) upon the subjective views held by individual workers as to whether the existence of a given error is or is not "évident."

6. Conflict in the approach to the question of the emendation of names between zoologists who possess a knowledge of the Latin and Greek Languages and those zoologists who do not possess such knowledge: When fifty years ago the present *Règles* were adopted by the Berlin Congress, practically every zoologist who took part in the discussions which led up to the adoption of the *Règles* was possessed of a sound knowledge of the Latin and Greek Languages, while many were excellent classics. Moreover, at that time the majority of names bestowed upon animals were either genuine Latin words or Latinised Greek words or words derived from genuine Latin or Greek words; the number of names which, looked at solely as Latin

or Latinised words or words treated as such ("traités comme tels"), were evidently defective was still small. To the zoologists of that day few difficulties therefore arose in determining whether the orthography of any given name was defective and, armed as they were with their knowledge of Latin and Greek, it was natural that they should have decreed that the determining factor in this matter should be whether or not the presence of a given error was "évident." Even so, if they had taken advice on the possible ambiguity involved in such a test, they would doubtless have agreed that theoretically such a provision was open to objection. Nevertheless, they would almost certainly have taken the view that in practice no harm was likely to come of a provision drafted in this way. For what the zoologists of the Berlin Congress certainly never foresaw was the rapid and progressive decline in the knowledge of the Latin and Greek languages by their successors during the next fifty years. Nor is there any sign that this process has exhausted itself; on the contrary, everything points to the likelihood of its continuance owing to the pressing need for finding time in the curriculum of students for new subjects of a strictly zoological character. We may therefore expect that, as time goes on, the zoologist who possesses a sound knowledge of Latin, still more of Greek, will be a rare exception.

7. Need for adapting the provisions in the "Règles" relating to the emendation of names in such a way as to call for the minimum of knowledge of the Latin and Greek Languages: The changing character of zoological education discussed in the preceding paragraph which has marked the last half century is itself sufficient to call for a thorough re-examination of the assumptions upon which the existing provision (Article 19) relating to the emendation of names is based. For mistakes in the orthography of names which would have been glaringly evident, and, indeed shocking, to the classically trained zoologist of fifty years ago are often not evident at all to his successors of today and, we may confidently expect, will be even less evident—and, therefore, even less objectionable—at least to the great majority of his successors of tomorrow. It seems to me, therefore—and I put this suggestion forward for comment and advice—that in any revision of Article 19 that may be agreed upon by the Copenhagen Congress full recognition should be accorded to the considerations indicated above and therefore that, whatever the size of the field within which it may be decided that the emendation of names should be permitted, the actual provisions governing the process of emending names should be as simple as possible and indeed as nearly automatic in character as they can be made. The aim should certainly be to devise criteria which are capable of being applied (1) quickly, (2) with the minimum of knowledge of the Latin and Greek languages, and (3), despite (2), without risk of giving rise to arid and time-consuming discussions of an etymological or philological character.

8. The problem of the emendation of names in relation to the need for stability in nomenclature: When the present *Règles* were adopted fifty years ago, the number of names to be considered in any given group was so very much smaller than it is today that the impact of nomenclatorial problems on taxonomic work was very much less, and, in consequence, it was perhaps natural that the architects of the code should have entertained

ambitious hopes for securing a high standard of technical excellence for the names used for animals. It may be supposed that this motive, coupled with the inclinations induced by the classical training then possessed by most zoologists, was responsible for the ambitious nature of the provisions in regard to the emendation of names then adopted. For ambitious those provisions undoubtedly were, contemplating, as they did, that every name (generic or trivial) published for use in zoological nomenclature should be subject to scrutiny from three points of view and that any name found to be defective in any of the three possible respects should immediately be emended to such extent as might be found to be necessary. There was—and still is—nothing permissive about the provisions included in Article 19, for, although clumsily drafted, that Article lays down very definitely that, where it is “*évident*” that any of the three types of error there specified is present, the name in question *must* be emended. It will, I think, be generally agreed that the position in regard to this matter is today profoundly different: (i) The experience of fifty years has shown very clearly that the hopes of our predecessors that the emendation of names was a process that could be effected without difficulty have proved to be misplaced; (ii) There has been a very marked reduction in the number of zoologists possessing the special knowledge required for the purpose of determining whether and, if so, in what respect, any given name ought to be emended; (iii) There has been a very great increase in the number of names published and therefore in the number of names which must be subjected to examination under Article 19 before they can be definitively accepted; (iv) Within the total number of names published, the number of names devised by zoologists possessing little or no knowledge of Latin or Greek has enormously increased and with it the number of names which cannot possibly be regarded as having been correctly formed. But it is not only by reason of the increase in the volume and complexity of the problem involved in the emendation of names that the situation today is essentially different from what it was half a century ago. For, as it seems to me, the present trend of opinion among zoologists and palaeontologists is definitely in the direction of a greater desire for stability in nomenclature and consequently for a reduction in the scope to be given for emendations on abstruse etymological grounds. It appears to me therefore that any formula for the revision of Article 19 put forward for consideration by the Copenhagen Congress in 1953 ought to be weighted in this direction, if it is to secure general acceptance by the zoologists of today, and even more, by the zoologists of tomorrow.

9. Need for ensuring that changes made in Article 19 do not lead to extensive changing of names in current use: The first aspect of the present problem to which the general principle suggested in the preceding paragraph is immediately applicable is that which is concerned with the measures to be taken to ensure that the introduction of reformed provisions governing the emendation of names does not give rise to an extensive changing of names in current use. That special action should be taken in this matter is clearly essential, since, to the extent that the new provisions are more restrictive than the present provisions, some of the emendations legitimately made under the existing Article 19—and now in universal use—would cease

to be correct, unless special action were taken to prevent this from happening. It is not easy however to devise a suitable provision for this purpose; there are two reasons for this: First, there are many thousands of names for which emendations have been published but which have never been generally accepted, although technically many of them are just as much justified as are the emendations of other names which are in general use. Second, Article 19 is so obscurely drafted and the wording employed is open to such varied interpretation that, except in a very narrow range of cases, it must always be a matter of opinion whether a given emendation already published does or does not fulfil the requirements laid down by that Article. It would therefore not be possible for the new Article to provide that no emendation legitimately made under the existing Article should be invalidated. Nevertheless, some saving clause must be devised if the very numerous emendations in current use are to be preserved. It seems to me that the only way of securing that currently accepted emendations are not invalidated as the result of the introduction of the revised scheme will be to include in that scheme a provision that, apart from emendations belonging to one or two limited classes, which it is suggested should be subject to automatic emendation, (a) the initial assumption should be that the original spelling of the name concerned is correct, but (b) that, where an emendation has already been published, it should be open to specialists in the group concerned to make application to the International Commission on Zoological Nomenclature for a ruling that that emendation be accepted. I suggest further that it should be an instruction to the Commission, when considering applications submitted under the procedure outlined above, to pay regard to the need for maintaining stability in nomenclature rather than to niceties of an etymological or philological character in cases where these considerations come into conflict with one another. The general effect of the proposal submitted above will no doubt be in some cases to accord formal recognition to names which are either misspelt or otherwise incorrectly formed, but the disadvantage so involved would, I believe, be far outweighed by the advantages to be obtained from the adoption of the generally accepted form of the name in question. The application of the general principle suggested above to the different aspects of the problem involved in the emendation of names is discussed separately later in the present paper in relation to each of the various classes of case concerned.

10. Question of the desirability of applying different tests for determining the acceptability of emendations published before and after the introduction of the revised scheme: In paragraph 9 above we have considered the difficult question of the procedure to be adopted for dealing with emendations made prior to the introduction of the new scheme. We have now to turn to the considerably less difficult but none the less complex question of the provisions to be inserted in the new Article relating to emendations published after the introduction of the new scheme. In the earlier portion of the present note I have expressed the belief that for the reasons there explained it will be found that the general—or at least the majority—view of present-day zoologists is in favour not only of more clearly defined provisions than those in the existing Article 19 but also of a restriction in the scope of those provisions. The merits of various possible provisions are

discussed in the following paragraphs. At this point, however, I desire to put to specialists a preliminary point which it appears to me is of some importance. This is the question whether it would not be wise to apply somewhat different provisions to emendations published after the introduction of the new scheme (*a*) for names published prior to the date of introduction of the new scheme and (*b*) for names published after that date. The reason why I put forward this suggestion for consideration is that as regards names falling in Class (*a*) above, it will, it seems to me, be desirable to take account not only of the technical correctness of a given name (as judged by whatever standards it may be decided to adopt) but also of the extent to which usage has given an advantage to the original spelling of the name concerned. In the case of names falling in Class (*b*) the question of usage does not arise and it would be practicable and perfectly justifiable to apply stricter tests in respect at least of those classes of case where it would be possible to lay down rules of an absolutely definite character which would provide a ready basis for the correction of a defectively formed name. Such a distinction would have the advantage on the one hand that it paid full regard to the claims of accepted usage and the need for promoting stability in all cases where those considerations were relevant, while on the other hand securing a higher standard in the formation of names in those cases where this object could be attained without prejudice to the principle of stability. A distinction such as that suggested above would be practicable only in respect of part of the field to be considered. At the present point therefore I do not put forward any definite suggestion for consideration in regard to this matter, but I propose to revert to it later where, as it seems to me, this question becomes directly relevant.

11. Problem of how to determine whether a given spelling constitutes an error which renders the name consisting of that word subject to emendation: As we have already noted (paragraph 5 above), the present Article 19 provides for the emendation of a name only when the presence of one or other of three specified categories of error is "évident"; in the foregoing paragraph I have drawn attention to the grave disadvantages arising out of the subjective element introduced into Article 19 by the use of the word "évident" and have suggested that the Article which will replace the existing Article 19 should be drafted in terms related exclusively to ascertainable objective facts. If this view proves to be generally acceptable, there will be no need to examine the arguments which have been advanced at different times both by the draftsman of the "Discussion" portion of the Commission's early *Opinions* and also by individual specialists commenting upon those *Opinions* in regard to the meaning to be attached to the expression "à moins qu'il ne soit évident que ce nom renferme . . ." as used in Article 19, for under the plan which I have suggested this objectionably subjective provision would find no place in the revised Article; equally it is not necessary to give consideration to the clarification of the expression "évident" adopted by the Thirteenth International Congress of Zoology in Paris in 1948 as a stopgap provision, pending the thorough revision of this Article (1950, *Bull. zool. Nomencl.* 4: 142—Conclusion 15(2)(a)). A revised Article drafted in the manner now suggested would be applicable to a smaller range of cases than the existing Article 19 as interpreted by some authors, but if this is so, it will

be in harmony with the—as I believe—general desire that the scope for permissible emendations should be restricted in the interests of nomenclatorial stability. All names which failed clearly to fall within the provisions (whatever they might be) that were included in the new Article would be excluded from emendation thereunder.

12. Problem of the categories of error to be accepted as being subject to emendation: We may now turn to consider what are the classes of error which it is desirable that the new Article should recognise as providing grounds for the emendation of names. As we have already noted (paragraph 5 above) the present Article 19 recognises three categories of error as providing legitimate grounds for the emendation of names. These categories are: (1) “faute de transcription”; (2) “faute d’orthographe”; (3) “faute d’impression.” Broadly, all the types of error which we have to consider may be regarded as falling within one or other of the foregoing categories. It will be convenient therefore to examine the various classes of error with which we are concerned under each of the foregoing broad headings. Before we do so, however, we must note that there has been much difference of opinion among specialists as to the meaning to be attached to the first and second of the three expressions quoted above (differences which have been fostered in part by the defective or ambiguous versions given for those expressions in the English and German translations published in 1905 simultaneously with the substantive French text). Great care will need to be taken in drafting the revised provisions which are to replace the existing Article 19, to avoid ambiguities by employing phraseology, the precise meaning of which is beyond possibility of question.

13. Prime importance of the “Official Lists” and “Official Indexes” as a means of stabilising names which have been validly emended or for which invalid emendations have been rejected: So far we have been mainly concerned with the nature of the tests to be applied in different sets of circumstances for determining whether and, if so, by what procedure and in what way a given scientific name shall in future be emended on the ground that, as originally published, that name was defective in form. There is however another important question which needs to be considered in relation to the emendation of scientific names. This is how to ensure that, once it has been established whether a given name should or should not be emended, the doubts regarding the spelling of the name in question engendered by the arguments advanced on the question whether emendation should be permitted should be dispelled as rapidly as possible. It is here that the decisions taken in Paris in 1948 by the Thirteenth International Congress of Zoology for the purpose of promoting uniformity and stability are of special importance. The decisions in question are twofold: first, that, whenever the Commission takes a decision regarding a valid name which is accepted by specialists as the oldest available name for the taxonomic unit concerned, that name shall be placed on the *Official List of Generic Names in Zoology* or, as the case may be, on the *Official List of Specific Trivial Names in Zoology*, and that, whenever it takes a decision regarding an objectively invalid name, that name shall be placed on the appropriate *Official Index of Rejected and Invalid Names* (whether

generic names or trivial names) (1950, *Bull. zool. Nomencl.* **4**: 267-268, 270-271, 334); second, that the *Official Lists* and *Official Indexes* should be integrated into the *Règles* themselves by being incorporated therein as schedules (1950, *ibid.* **4**: 333-334). These decisions, being general in character, will apply to all decisions taken by the Commission in regard to the emendation of names and, in consequence, names which have been validly emended will automatically be placed in their emended form on the appropriate *Official List* (except on the rare occasions on which the Commission is called upon to give a ruling on the question of the emendation of a name which is not regarded by specialists as the oldest available name for the taxonomic unit in question), while every version of a name ruled by the Commission to be an "invalid emendation" will be similarly placed on the appropriate *Official Index*, together with all original spellings of names where the Commission rules in favour of the emendation of the name in question. Thus, the mechanism provided by the *Official Lists* and *Official Indexes* will be of especial value in restoring uniformity of nomenclatorial practice, where this has been disturbed by arguments among specialists whether particular names should be emended and, if so, in what way.

PART 2. SUGGESTIONS FOR A COMPROMISE SCHEME DESIGNED TO SECURE THE WIDEST POSSIBLE MEASURE OF SUPPORT

(a) Need for a broadly based compromise scheme commanding the widest possible measure of support

14. Need for a scheme commanding the widest possible measure of support: I recognise that the task of devising a scheme for the clarification and reform of the provisions in the *Règles* relating to the emendation of names is of quite exceptional difficulty, (a) because the existing provisions (Article 19) have been interpreted by different authors in such very different ways, and (b) because of the differences in outlook which in this matter separate classically trained and other zoologists from one another. In a case of this kind the object must be to devise a scheme which, while not conceding all the points sought by those who hold either of the extreme points of view, nevertheless embodies all the features of each school of thought that are capable of being reconciled with one another. In other words, what is required is a compromise scheme which by being as broadly based as it is possible to make it will secure the maximum degree of support from all quarters. Inevitably, any such compromise involves considerable sacrifice and calls for considerable effort on the part of those whose views are not met in full. Nevertheless, such a compromise is clearly essential in the present instance, for without it the

only alternatives are (1) to leave Article 19 in its present indeterminate condition, a course which everyone agrees could lead only to further instability and confusion in nomenclature, or (2) for one school of thought or the other to seek to impose its point of view in its entirety upon all other workers, a course which would be peculiarly undesirable in a field such a zoological nomenclature where the only sanction for the *Règles* is that provided by the measure of support accorded by the general body of workers in zoology and palaeontology.

15. Outline of a possible compromise scheme suggested : The object of the present paper is to elicit the opinion and advice of interested specialists on the form which the revised provisions relating to the emendation of names should take. In presenting the various aspects of the problem involved, it has seemed to me that this might most usefully be done if I were to link together the various questions which will need to be settled in such a way that the suggestions submitted for consideration would constitute the outline of a compromise scheme based on the principles set out above. In drawing up the following tentative suggestions, I have paid regard also (1) to the need for devising a scheme which will involve the minimum interference with existing nomenclatorial practice, (2) to the, as I believe, growing desire for securing means for determining without possibility of argument whether any given name is to be emended and, if so, in what manner, and (3) thereby reducing to the minimum the scope for argument on etymological and philological questions which fewer and fewer zoologists today possess either the qualifications or the inclination to discuss. If in its main outlines the compromise scheme now suggested were to meet with general approval in the sense that it was looked upon as offering the best means for harmonising opinion on the subject of the emendation of names, alternative solutions would be possible as regards several of the component parts of the scheme and where this seems to me to be the case, I have indicated those alternatives for the purpose of obtaining the views of interested specialists as to which should, in their opinion, be preferred.

(b) Need for a clear definition of the class of spelling changes covered by the expression "emendation" and matters incidental thereto

16. Confusion arising from the present lack of a definition of the meaning to be attached to the expression "emendation" : One of the difficulties which at present arise in any discussion of the problem of the emendation of names is the lack of any definition of the meaning to be attached to the expression "emendation." In consequence, that expression has been applied indifferently (1) to spellings of names which the authors concerned have stated are deliberate departures from the spellings used for those names by their original authors and (2) also to spellings of names which differ from those used by the original authors of the names concerned but which were published without any intimation that the original spelling was

being deliberately changed for the purpose of emending the names in question. This lack of definition has led to some authors holding the view that only names belonging to class (1) above are properly to be regarded as emendations falling within the scope of Article 19, while other authors have taken the line that any spelling which differs from the original spelling of a given name is to be regarded as constituting an emendation of that name, though (naturally) not necessarily as a justified emendation. These differences in the interpretation of the expression "emendation" have inevitably led to confusion and to instability. Clearly, therefore, this is a defect which should be remedied in the coming revision of the rules relating to the emendation of names.

17. Proposed definition of the expressions "emendation" and "erroneous spelling change": In a paper published in 1947 (*Science* (n.s.) **66**: 315-316) a sub-committee of the Smithsonian Institution Committee on Zoological Nomenclature recommended that the expression "emendation" should be restricted to those changes in the spelling of a name where the author making the change made it clear that the change was intentional or where it was demonstrable from the original publication that the change was of this kind; all other changes should, the sub-committee suggested, be known as "errors"; the sub-committee further suggested that, where it was doubtful whether any spelling change was intentional or not, that spelling change should be treated as an "error" and not as an "emendation." The essential feature of the proposal so submitted by the Smithsonian Sub-Committee provides a clear cut means for overcoming the difficulties to which reference has been made in the preceding paragraph and will, I feel, win general approval from zoologists. Turning to the details of the proposal submitted, there are two points which call for consideration. First, it may be felt—and this is the view which I have provisionally reached myself—that it would be better to limit the definition of the expression "emendation," so as to include within its scope only those cases where the author publishing a spelling for a name which differs from the original spelling of that name himself expressly makes it clear that the spelling change is intentional. In other words, I would suggest the exclusion, from the definition, of words which would bring within its scope those cases where an author does not expressly make it clear that he is deliberately altering the spelling of the name but where it is demonstrable from the original publication that this is what he was doing. My reason for making this suggestion is that in some cases the subjective character of the test proposed would be calculated to give rise to argument whether a given spelling change did or did not constitute an "emendation." Moreover, this provision does not seem to be necessary, for, if workers in the group concerned were of the opinion that the name in question should be emended in the manner in question, there would, no doubt, be no difficulty in finding a later paper, the author of which adopted the same spelling change, at the same time making it clear that he was doing so intentionally. The second point which I put forward for consideration is that the expression "error" suggested by the Sub-Committee is too broad in its scope, for it does not convey any indication of the subject with which it is concerned. While I entirely agree that spelling variants which are not clearly marked by their authors as being intentional should be known by a special term, I do not feel that the expression "error"

would be sufficiently self-explanatory for this purpose and I suggest that in its place the expression "erroneous spelling change" should be adopted. Under the foregoing plan, every spelling variant would be either an "emendation" or an "erroneous spelling change"; the former would be defined as "any change in the spelling of a previously published name, which the author of that spelling change makes clear is intentional," while the latter would be defined as "any change in the spelling of a previously published name, other than an emendation."

18. Proposed definition of the expressions "valid emendation," "invalid emendation" and "erroneous original spelling": The adoption of the definitions of the expressions "emendation" and "erroneous spelling change" suggested in the preceding paragraph would define clearly those types of spelling change which alone are to be taken into account in considering the question of the emendation of a scientific name. But the definition suggested for the first of these expressions cannot provide guidance as to the nomenclatorial status to be accorded to any given emendation, for clearly that status will vary according to whether the emendation in question is made in accordance with the provisions of the *Règles* or is in contravention of those provisions. As will be seen in the following paragraph, it will be necessary to accord a different status to each of these types of emendation. For this purpose, it will be desirable that the *Règles* should contain precise definitions of the expressions "valid emendation" and "invalid emendation." It is suggested that a "valid emendation" should be defined as being "an emendation made in accordance with any of the methods prescribed for the emending of names" and that an "invalid emendation" should be defined as being "any emendation, other than a valid emendation." In the immediately following paragraph consideration is given to the position of "valid emendations" and "invalid emendations" respectively in relation to the Law of Homonymy and it will be necessary then to consider also the position of an original spelling when later that spelling is rejected in favour of a "valid emendation." For this purpose it will be convenient to prescribe an expression to denote this concept; it is suggested that the expression to be adopted should be "erroneous original spelling."

19. Nomenclatorial status to be accorded to a "valid emendation," to an "invalid emendation" and to an "erroneous original spelling": Everyone will, I think, agree that the greatest confusion would be liable to arise if, when a "valid emendation" was made to any given previously published name, that name were to lose its previous priority and to rank only as from the date on which the "valid emendation" was published for it; for under such a system it would be possible to displace altogether any well-known name that was defectively formed whenever some other name for the taxonomic unit concerned was published between the date on which the defectively formed name was published and the date on which a "valid emendation" of that name was published. For the purpose of preventing unwarrantable nomenclatorial disturbance of this type the International Congress of Zoology (see 1950, *Bull. zool. Nomencl.* 4: 68) has ruled that, where a name is validly emended that name so emended is to rank for priority as from the date on which the name in question was originally published in

an incorrect form and is to be attributed to the author by whom it was originally so published. In other words an emendation which is a "valid emendation" has no separate nomenclatorial existence of its own, the position being that the "valid emendation" simply replaces the original defectively formed name and acquires the priority attaching to that name and is attributable to the author by whom the name was originally published in an incorrect form. While it is not to be supposed that anyone would wish to see any alteration in the foregoing provision relating to the status of a "valid emendation," it does not follow at all that it would be desirable to accord a similar status to an "invalid emendation." Two courses are possible: (1) to lay it down that an "invalid emendation," like a "valid emendation," possesses no separate existence of its own; (2) to prescribe that every "invalid emendation" is to rank for priority as from the date upon which it was published and it is to be attributed to the author by whom it was published. Under the second of these courses, every "invalid emendation" would rank as a separate name. As such, an "invalid emendation" would be available for adoption as the name of the taxonomic unit for the name of which it was originally published as an emendation, where the original name in question was itself later found to be invalid as a junior homonym of some other name, provided that the difference in spelling between the original name and the "invalid emendation" later published for it was not so slight as to render the two names liable to be treated as homonyms of one another under the Law of Homonymy. Under this proposal an "invalid emendation" would rank for all purposes as an independently published name and would accordingly render invalid any subsequent use of that name either for some other genus or, as the case might be, as the trivial name of some other species in the same genus. The portion of this proposal which is concerned with the status of an "invalid emendation" (i.e., the proposal that such an emendation should render, in the case of a generic name, any subsequent use of the name in its invalidly emended form invalid as a junior homonym, and, in the case of a trivial name, have a corresponding effect within the genus concerned) does no more than restate the existing legal position (1950, *Bull. zool. Nomencl.* **4**: 163); the portion of this proposal which is novel is that under which an "invalid emendation" would rank for priority as from the date on which it was published (and not from the date of publication of the earlier name so proposed to be emended) and would be attributed to the author by whom it (the invalid emendation) had been published. This feature, which constitutes an essential part of the proposal that an "invalid emendation" should be granted a nomenclatorial status distinct from that of the name which it had been intended to emend, has the advantage that it emphasises the independent status proposed to be accorded to an "invalid emendation." It is recommended that the foregoing status should be accorded to this class of name. Finally, we have to consider what status, if any, should be accorded to an "erroneous original spelling." We are concerned here with the status of a name which, as applied to one taxonomic unit, has been rejected as incorrect and has been replaced by an emendation. In this context therefore an "erroneous original spelling" clearly can possess no status in nomenclature, since otherwise it would take precedence over the emendation by which it was replaced. It would be quite unreasonable to accord any different status to an "erroneous

original spelling" in relation to other names under the Law of Homonymy. It is accordingly suggested that the scheme should provide that an "erroneous original spelling" possess no status in zoological nomenclature.

20. Nomenclatorial status to be accorded to an "erroneous spelling change": Under the definition suggested in paragraph 17 above, the spelling variants in future to be known as "erroneous spelling changes" would include, in addition to a few spelling changes which were probably intentional but which the author concerned did not indicate as such (and which therefore do not rank as "emendations"), a large number of accidental spelling variants made through ignorance as to how the name in question was originally spelt, or through carelessness on the part of the author, editor or printer concerned. Naturally in most cases the difference in spelling between (1) an "erroneous spelling change" and (2) the spelling used when the name in question was first published will be slight, often consisting of a difference of a single letter only. In some cases, however, an "erroneous spelling change" may constitute a word totally distinct from the original name, for it has occasionally happened that, as the result of some extraordinary lapse of memory or lack of concentration, an author, when intending to cite some previously published name, has in fact written down some word which has never been published as a name at all, as Walker did in 1851 when, intending to refer to the Dipterous genus *Myolepta* Newman, 1838, he wrote down not the word *Myolepta* but the unconscious inversion of that name, *Leptomylia*. The Smithsonian Sub-Committee to which reference has already been made (paragraph 17 above) recommended that all "erroneous spelling changes" (termed "errors" by the Sub-Committee) should be treated as possessing no status in zoological nomenclature. It is part of this recommendation that an "erroneous spelling change" (e.g., *Leptomylia* as published by Walker in 1851) should not render invalid as a junior homonym any later use of the same word as applied to some other taxonomic unit. This seems to me the most logical course to follow in relation to "erroneous spelling changes" and this is provided for in the definition which I have suggested should be adopted for the foregoing expression.

21. Suggested adoption of a saving clause to render possible the acceptance of an "erroneous spelling change" in cases where such a variant is in current use: It will, I think, be found that in certain cases a taxonomic unit is currently known by a name spelt in a manner different from that in which it was originally published, although no emendation (in the sense in which it is suggested in paragraph 17 above that that expression should in future be defined) is not known ever to have been published. In other words, the currently accepted spelling in such a case is an "erroneous spelling change" and not an "emendation." Such a case could hardly arise except in the case of names published long ago, where the currently accepted spelling is based upon conventional usage and not upon direct reference to the book in which the name in question was originally published. As will be seen, it is suggested later in the present paper that, in the case of emendations published prior to the introduction of the revised scheme, the question whether any such emendation should be accepted as a valid emendation should, except in certain limited classes of case, be made subject to a decision on that case

by the International Commission on Zoological Nomenclature. In the special—and, no doubt, limited—class of case with which we are here concerned, it would seem a pointless act of pedantry to insist that, where the currently accepted spelling of a name (being a spelling different from the original spelling) is, or appears to be, not an “emendation” but an “erroneous spelling change,” authors desiring to obtain authority from the International Commission for the continued use of the currently accepted spelling should be required, as a preliminary to the submission of an application to the Commission, themselves formally to republish the name in question spelt in the currently accepted manner in terms which would bring that spelling variant within the definition proposed to be given to the expression “emendation.” Such a requirement would appear to be all the more ritualistic in view of the fact that, if sufficient time and trouble were to be devoted to the barren task of searching the literature, it might frequently be found that in some overlooked publication an author had in fact used the variant spelling in question in conditions which had elevated that variant from the status of an “erroneous spelling change” to that of an “emendation.” It is accordingly suggested that the revised scheme should include a provision authorising the International Commission on Zoological Nomenclature (1) to take into consideration an application for the acceptance of an “erroneous spelling change” in like manner as an application for the acceptance of an “emendation,” where it is satisfied that current usage is such as to justify the consideration of such an application, and (2) after having considered such a case in consultation with interested specialists, to direct that the “erroneous spelling change” concerned be treated as a “valid emendation,” where it considers this necessary in the interests of nomenclatorial stability and the avoidance of confusion.

(c) Errors in transliterating words from languages using alphabets other than the Latin alphabet

22. Ambiguity of the expression “faute de transcription” as used in Article 19: It has sometimes been argued that the expression “faute de transcription,” as used in Article 19, means no more than a spelling mistake arising out of an error in copying on the part of the original author of the name; but this argument appears to be quite untenable in view of the fact that, if this were the meaning which in the present context properly applies to this expression, the expression “faute de transcription” so used would be identical in meaning with the expression “faute d’orthographe,” the immediately following expression used in Article 19. Thus, if the foregoing interpretation were correct, we should be faced with one more example of the meaningless use of repetitive phrases which, as noted by the Paris Congress (1950, *Bull. zool. Nomencl.* **4**: 195), had till then marred other parts of the *Règles*. In opposition to the foregoing interpretation of the expression “faute de transcription,” other zoologists have advanced the view that, as used in Article 19, this expression has a meaning identical with that which would have been conveyed if in its place there had been used the expression “faute de transliteration.” In other words, these zoologists have argued that in this

context this expression refers to errors of spelling committed by authors when giving a Latinised form to words belonging to languages employing alphabets other than the Latin alphabet. In actual fact, the latter interpretation is undoubtedly correct, for, as reference to the Substantive French text of the *Règles* shows, the set of recommendations for the transliteration into the Latin alphabet of Greek words given in Section "F" of the *Appendice* bears the title "Transcription des mots grecs," thus showing that, as used in the *Règles*, the French word "transcription" has a meaning identical with the English word "transliteration"; it is probable that the controversy which has occurred regarding the meaning of this portion of Article 19 would never have arisen if it had not been for the unfortunate use in the English translation of the slightly ambiguous word "transcription." Incidentally, we may note at this point that within six years of the first publication of the *Règles* (in 1905) the foregoing interpretation of this part of Article 19 was laid down (though without direct reference to the substantive French text) by the International Commission on Zoological Nomenclature in its *Opinion* 36 (1911, *Smithson. Publ.* **2013** : 84), where the Commission directly synonymised the words "transcription" and "transliteration" ("The original publication of . . . make it evident that an error of transcription (*seu* transliteration) is present . . .").

23. Provisions in the "Appendice" to the "Règles" relating to the transliteration into the Latin alphabet of words derived from languages using other alphabets: At the time when the *Règles* were adopted, it was still unusual (except in the case of scientific names based upon place-names or upon the names of persons) for names to be formed otherwise than from Latin words or from Latinised versions of Greek words. There were many names of this latter type and it was to deal with them that the Berlin Congress devoted the special Section (Section "F") of the *Appendice* to the *Règles* to a series of rules for the transliteration of words from the Greek, to the Latin, alphabet, to which reference has already been made. It was not considered necessary to provide rules for the transliteration into the Latin alphabet of words belonging to, or derived from, any other alphabet. All that was thought to be required in respect of such words was to provide (in Section "G" of the *Appendice*) rules for the transliteration to be adopted in cases of this kind where they arose in connection with scientific names based either upon place-names or upon the names of persons. Unfortunately, from the point of view of clarity, the Berlin Congress omitted to include any provision to make it clear whether these two sections (Sections "F" and "G") of the *Appendice* to the *Règles* were to be regarded as containing mandatory provisions or whether they were to be looked upon as doing no more than offering advice to zoologists as to what constituted good practice in this matter. The result of this omission inevitably led to the greatest diversity in subsequent practice. Classically-trained zoologists argued that the effect of Section "F" in the *Appendice*, when read in conjunction with Article 19, was to render obligatory the emendation of all scientific names consisting of words of Greek origin, when these were defectively transliterated, and large numbers of such emendations have been published since the adoption

of the *Règles* fifty years ago. Other specialists however took the view that all the provisions in the *Appendice* to the *Règles* were permissive (i.e., non-mandatory) only and therefore that it by no means followed that every name consisting of a defectively transliterated Greek word should be emended. The Commission itself was not consistent in its attitude to this question, for, although (as noted above) it accepted (in *Opinion* 36) the view that the word "transcription," as included in the expression "faute de transcription" was identical in meaning with the word "transliteration" and consequently emended the three names dealt with in that *Opinion*, it did not always apply this principle when giving rulings as to the interpretation of Article 19. The ambiguity regarding the relationship of the provisions in the *Appendice* to those in the actual Articles of the *Règles* was finally removed by the decision by the Thirteenth International Congress of Zoology at Paris in 1948 to insert an Article in the *Règles* to make it clear that the provisions in the *Appendice* are not mandatory but are "in the nature of recommendations as to good nomenclatorial practice" (1950, *Bull. zool. Nomencl.* 4: 73). Accordingly as matters now stand, Article 19 and Section "F" of the *Appendice* (now converted into a Schedule to the *Règles*) do not require that every defectively formed name of Greek origin is to be emended.

24. Conflicting approaches to the problem constituted by names containing errors of transliteration: There has in the past been wide diversity of view among zoologists on the question of the extent to which names containing errors of transliteration should or should not be subject to emendation. In part, these differences of opinion arose from divergent views regarding the interpretation properly to be given to the provisions in the existing Article 19; in part, to differences in outlook as between those zoologists who possessed a training in the Classical Languages on the one hand and on the other hand those who did not. The school of thought which holds that every error of transliteration should at once be emended is well illustrated by the scholarly "Index of Palaeozoic Corals" published by the British Museum in 1940 in which Lang, Smith and Thomas emended every name which, in their opinion, contained an error of any kind, nearly 70 such emendations being made among the names of the 564 genera recognised by those authors; some of the corrections so made involved the publication of names so different in appearance from the counterpart names as originally published as to appear to the eye of the non-classically trained zoologist as entirely new names; as examples of the emendations so made we may cite *Acnigmatophyllum*, an emendation of *Enygmophyllum*, Fomichev, 1931; *Polydiselasma*, an emendation of *Polydilasma* Hall, 1851; *Strobilelasma*, an emendation of *Strobilasma* Scheffer, 1933. At the other end of the scale may be cited the view expressed in 1947 (*Science* (n.s.) 66: 315-316) by the Sub-Committee of the Smithsonian Institution Committee on Zoological Nomenclature, to which reference has already been made (paragraph 17 above), which urged that "incorrect transliteration" should not be recognised as an "error" subject to emendation. As might be expected the general practice of zoologists appears to lie between these two extremes, some zoologists inclining in the direction of the view represented by Lang, Smith and Thomas in the work cited above, others inclining towards that held by the Smithsonian

Sub-Committee. In a case of this kind, any revised provision, if it is to win the widest possible degree of support, must take account of both these points of view and must recognise also the existence of a large body of intermediate opinion. In other words, if a high degree of support is to be secured, the exponents of each of the extreme points of view will need to make some concession to the point of view of the other. At this point it is relevant to note that there is a very important consideration to which perhaps insufficient attention has been given in previous discussion of the problem of emending names. This is the need for devising a scheme which will involve the minimum of change in current nomenclatorial practice, especially in relation to well-known names. From this point of view neither of the extreme schools of thought can be regarded as offering an acceptable solution, for neither pays regard to the need for avoiding undesirable name-changing. The ultra-classicists, taking their stand upon etymological propriety, would be prepared to change the spelling of any name, the formation of which did not come up to the requisite standard; the anti-classicists, taking their stand upon the need for maintaining the original spelling of a name, without regard to errors of transliteration, would be prepared to witness the reversion to the original (defective) spelling of the large number of names—many in widespread use—which, when originally published, contained errors of transliteration but which have later been emended, the emended and not the incorrect original spelling being the spelling now in current use. This therefore seems to me to constitute one of those aspects of the problem where it is desirable from every point of view that the revised provisions to be inserted in *Règles* should represent a compromise, to the attainment of which each of the opposing schools of thought will have made some contribution for the sake of general agreement. It is always difficult for those who feel strongly on any given subject themselves to take the lead in suggesting a basis for a possible compromise. I have come to the conclusion therefore that it might facilitate the discussion of this part of the subject and advance the prospects of securing a generally acceptable settlement if, as Secretary to the International Commission on Zoological Nomenclature, I were at this point to take the initiative by submitting for the consideration of those interested the outlines of a scheme for dealing with the problem of errors of transliteration, which steers a middle course between the more extreme schools of thought in regard to this subject. It is with this object in view that in the following paragraphs I set out the main features of a scheme which I hope may commend itself to zoologists generally. The problem presented by scientific names based upon the names of persons and places is excluded from the immediately following discussion, being reserved for separate treatment later in this paper (see paragraphs 38-45 below). The scheme now suggested is designed on the one hand to prevent the perpetuation of gross errors of transliteration but on the other hand to recognise both the decline of knowledge of, and of interest in, the Classical Languages among zoologists and, in addition, the desire, now much stronger than formerly, to promote stability in nomenclature by avoiding unnecessary name-changing. The scheme now tentatively submitted represents a deliberate effort to harmonise existing differences of opinion by means of a compromise plan designed to secure the widest practicable measure of support from zoologists of all shades of opinion,

25. Differences between the problems arising in connection with the emendation of names containing errors of transliteration according to the relative dates of publication of the original incorrectly formed name and the emendation published therefor: In considering the provisions which might appropriately be inserted in the *Règles* for emending the spelling of names consisting of words incorrectly transliterated from languages employing an alphabet other than the Latin alphabet, it is desirable to consider separately the three groups into which such emendations fall, when looked at from the point of view of the relative dates of publication of the original incorrectly formed name and of the emendation published therefor. The groups in question are: *Group No. 1*, which comprises all names for which emendations have already been published or will have been published prior to the coming into operation of the revised scheme; *Group No. 2*, comprising names published prior to the coming into operation of the scheme for which emendations are published after that date; *Group No. 3*, comprising all names published after the coming into operation of the revised scheme. The problems arising in connection with these three groups of names are discussed separately in the immediately following paragraphs. In that discussion I have excluded from consideration the special problems which arise in connection with scientific names based upon the names of persons and places, when the words of which those names are composed are words transliterated into the Latin alphabet from some other alphabet and the method of transliteration used is (or is believed to be) incorrect. As already explained, these special problems are discussed at a later point in the present paper (paragraphs 38-45 below).

26. Emendations on the ground of errors of transliteration published, prior to the coming into operation of the revised scheme, for scientific names, other than names consisting of, or based upon, the names of persons or places: In the immediately preceding paragraph (paragraph 25) I have expressed the opinion that, except in the special case of scientific names based upon certain classes of personal names and place names (the position as regards which is discussed in paragraphs 38-44 below) it is not possible to devise any rule of a general character which can be applied automatically and which would secure the retention of the numerous emendations now currently accepted by specialists in the groups concerned, while at the same time providing for the rejection of the much larger number of emendations that have been published but have not been accepted by specialists and are not in current use. In these circumstances the only means by which the desired end can be secured is through the adoption of a provision which would make it the duty of the International Commission on Zoological Nomenclature to decide, subject to certain prescribed conditions, which of the emendations published before the entry into operation of the revised scheme on the ground that the names concerned consist of words containing errors of transliteration, are to be accepted and which rejected. It is accordingly suggested that the revised scheme should provide that, so far as concerns any scientific name, not being a name consisting of, or based upon, the name of a person or a place, for which, prior to the coming into operation of the scheme,

an emendation has been published on the ground that the word of which that name consists has been incorrectly transliterated into the Latin alphabet from some other alphabet, the original spelling is to be retained, save and in so far as the International Commission on Zoological Nomenclature, on receipt of an application by specialists, may direct that the emendation so published or, if two or more emendations have been published, one of those emendations is to be accepted. In order to promote the general purpose which I have suggested should underlie the revised scheme, namely that the emendation of names should be restricted to within much narrower limits than formerly was considered desirable by many workers, the portion of the scheme dealing with the foregoing matter should include a provision requiring the Commission, when reaching its decision, to pay regard not so much to considerations of an etymological or philological character as to the nature of current nomenclatorial practice and the need for promoting stability in nomenclature. Further, in order to ensure so far as possible that the fullest information is available to the Commission in regard to the nature of current nomenclatorial practice, before it reaches a decision on an application of this class, it is suggested that the scheme should require the Commission to give public notice of any such application in like manner as though it were an application involving the possible use of its plenary powers; for the sake of emphasising the same consideration, it would, it is suggested, be well to require the Commission, when deciding cases of this class, to do so in the light of the information contained in the original application and of any other information subsequently elicited. It is unfortunately true that the introduction into the *Règles* of a provision which made the validity of previously published—and currently accepted—emendations contingent upon a decision to be obtained from the Commission, although (as it seems to me) an inevitable feature of any scheme which is to be free from ambiguity and yet also to provide for the acceptance of some but not all of the emendations already published, might be held by any person who was a confirmed name-changer to justify the immediate rejection of a large number of emendations (made on the ground that the names concerned contained, when first published, errors of transliteration) which are now in universal use, on the excuse that as yet no decision to the contrary had been taken by the International Commission. The risk involved closely resembles the risk of well-known names being hastily abandoned on the discovery of some older but long-overlooked name for the taxonomic unit concerned, a matter to which careful consideration was given in Paris in 1948 both by the Commission and by the International Congress of Zoology. It was then decided (1950, *Bull. zool. Nomencl.* 4: 234-236) that, in order, so far as possible, to ward against this latter risk there should be inserted in the *Règles* a *Recommandation* deprecating hasty action without reference to the Commission. On the analogy of the action so taken it is suggested that, in connection with the provision here under discussion, there should be inserted in the *Règles* a *Recommandation* urging that an emendation that is in current use at the time of the coming into operation of the revised scheme should not be abandoned in favour of the original spelling until the question whether the emendation in question is to be accepted or, as the case may be, rejected has been submitted to, and decided by, the International Commission.

27. Emendations, on account of errors of transliteration, of scientific names, other than scientific names based upon the names of persons or places, where the scientific name in question was published before the coming into operation of the revised scheme but was not emended before that date: We have now to consider the position of scientific names published prior to the coming into operation of the revised scheme which contain errors of transliteration but for which no emendation has been published prior to the foregoing date. As in the case of scientific names which have already been emended, or will have been emended, on the foregoing account before the revised scheme comes into operation, it is proposed to set on one side for later consideration (paragraphs 38-44 below) the position of scientific names based upon the names of persons or places. The first point which we have to note is that, if the revised scheme were to include automatic provisions capable of being operated by zoologists without reference to the Commission, it would be essential that the *Règles* themselves (or the Schedules attached thereto) should contain precise guidance as to the method to be followed in transliterating into the Latin alphabet words normally written in some other alphabet. Such an arrangement would involve giving mandatory force to the sections of the schedule concerned which deal with the question of the transliteration of words into the Latin alphabet. At the present time the only alphabet for the transliteration of words from which recommendations are given in the Schedules to the *Règles* is the Greek alphabet. In addition, under a decision taken by the International Congress of Zoology in Paris in 1948, there will later be a corresponding set of recommendations in respect of the transliteration of words from the Cyrillic alphabet to the Latin alphabet (1950, *Bull. zool. Nomencl.* 4: 229). In respect of words transliterated from the Greek alphabet it would be possible to include in the revised scheme a provision that, after the coming into operation of that scheme, any word transliterated from the Greek, into the Latin, alphabet, which, when published as a scientific name, is transliterated differently from the manner prescribed in the Schedule to the *Règles* dealing with this subject is automatically to be corrected to such extent as may be necessary to make its spelling conform with that required by the Schedule referred to above; a similar provision could be adopted in relation to the emendation of names consisting of words transliterated from the Cyrillic alphabet, as soon as the set of rules relating to this subject has been incorporated (as agreed upon by the Paris Congress) has been added to the appropriate Schedule to the *Règles*. This system could be extended further at later dates, as and when rules relating to the transliteration into the Latin alphabet of words normally written in other alphabets, besides the Greek and Cyrillic alphabets are added to the appropriate Schedules to the *Règles*. It is necessary at this point to consider whether it is desirable that rules of this kind should be included in the revised scheme in relation to the emendation of scientific names published before the coming into operation of that scheme. The considerations which we have here to weigh are twofold in character: first, the extent to which it would be objectionable that words consisting of defectively transliterated words should be permitted to remain unemended; second, the extent to which nomenclature would be liable to undesirable disturbance if every scientific name consisting of a word defectively

transliterated from the Greek or Cyrillic alphabets that had been published prior to the coming into operation of the revised scheme was to be liable after that date to automatic emendation in accordance with rules for transliteration embodied in the Schedules to the *Règles*. My belief is that, contrary to what would have been the case if this matter had been considered fifty years ago, the general feeling of zoologists now would be against a provision which called for the automatic emendation, after the coming into operation of the revised scheme, of all scientific names consisting of transliterated versions of words normally written in the Greek or Cyrillic alphabets, whenever there was an error of transliteration in the words of which names were composed, for this would certainly give rise to a substantial amount of name-changing when the revised scheme came into operation. On the other hand, I believe also that there are some names containing errors of transliteration from the Greek and Cyrillic alphabets which have not yet been emended, and will not have been emended before the revised scheme comes into operation, which it would be the general wish of zoologists should be emended. I should, however, expect that the number of such cases would be small. Nevertheless, if the revised scheme is to be comprehensive in character, it should contain a provision for dealing with this exceptional class of case. In view of the fact that the provision required is one which would be highly selective, it would clearly be necessary that it should take the form of the grant to the International Commission on Zoological Nomenclature of a suitable discretionary power to deal individually with cases of this sort on their merits. So far, we have considered only the question of the emendation, after the coming into operation of the revised scheme, of names published before that date which consist of words transliterated into the Latin alphabet either from the Greek alphabet or from the Cyrillic alphabet, those being the only alphabets for the transliteration of words from which recommendations are given, or will shortly be given, in the appropriate Schedule to the *Règles*. But we have also to consider the question of names published in the same period which consist of words transliterated into the Latin alphabet from alphabets other than the two alphabets referred to above, where those words contain—or are believed to contain—errors of transliteration. Since in these cases the Schedules to the *Règles* contain no provisions which could form the basis upon which an automatic system of emendation could be built, any emendation of such names that might be considered necessary could be effected only through the use by the International Commission of discretionary powers expressly granted to it for that purpose.

28. In the light of the considerations discussed in the preceding paragraph, I suggest that provisions to the following effect should be included in the revised scheme: (1) After the date of entry into force of the revised scheme no scientific name, not being a scientific name based upon the name of a person or place, published before that date may be emended by any author on the ground that the word of which that name is composed or on which it is based contains an error of transliteration; (2) Where, however, specialists are of the opinion that the word of which such a name is composed contains an error of transliteration which ought to be corrected, it shall be open to them to make application to the International Commission on Zoological Nomenclature

for the name to be emended and it shall thereupon be the duty of the Commission to determine whether the name in question is to be emended and, if so, in what way; (3) The procedure to be followed in considering such an application and the principles which should guide the Commission in reaching a decision thereon should be the same as those suggested in paragraph 26 above in relation to emendations published before the coming into operation of the revised scheme.

29. Emendation, on the ground of faulty transliteration, of words, other than words consisting of, or based upon, the names of persons or places, published as scientific names after the coming into operation of the revised scheme: Now that we have considered the problem of the emendation, on the ground of faulty transliteration, of words, other than words consisting of, or based upon, the names of persons or places, published before the coming into operation of the revised scheme, (a) where an emendation has been before that date, and (b) where it is desired to emend such a name after that date, we have to turn to the question of the emendation, on the foregoing grounds, of names published after the revised scheme has come into operation. As on the preceding occasion, we have here to consider this problem in relation to two different groups of names. These groups are: (1) names consisting of words transliterated into the Latin alphabet from alphabets, for the transliteration of which no guidance is given in the Schedules annexed to the *Règles*, (2) names consisting of words transliterated into the Latin alphabet from an alphabet (e.g., the Greek alphabet), for the transliteration of words from which a set of recommendations is given in the Schedules to the *Règles*. Names belonging to the first of these groups are, as regards emendation, in a position exactly similar to that of names transliterated from the same alphabets which have been, or will have been, published before the revised scheme comes into operation. For the *Règles* contain nothing by which zoologists can determine whether the transliteration used at the time when the name in question was first published is correct or not. It follows therefore that it is not possible to introduce into the *Règles* provisions for the emendation of such names which can be operated by zoologists without reference to the International Commission on Zoological Nomenclature, and that, if provision for the emendation of such names is to be made in the revised scheme, it should take the form of making the emendation of such names subject to the same rules as those suggested (in paragraph 28 above) for the emendation, after the coming into operation of the revised scheme, of names published before that date, where emendation is desired on the ground of faulty transliteration into the Latin alphabet. When, however, we turn to the second of the groups indicated above, the position is different, for here the *Règles* do contain (in the Schedules) provisions which could be used as the basis of automatic emendation. Moreover, in the case of names belonging to this group there could be no risk of causing instability in nomenclature if mistakes of transliteration contained in such names were to be made subject to automatic correction (and the names in question subject therefore to automatic emendation). For the names in question, being new names, could not have acquired any body of usage in their incorrectly spelt form. The alternative courses of action possible are: (a) to treat all names, other than names based upon

the names of persons or places (the position as regards which is considered separately in paragraphs 38-45 below), published after the coming into operation of the revised scheme in the same way, for the purpose of emendation on the ground of faulty transliteration, irrespective of whether or not the Schedules to the *Règles* contain provisions for the transliteration into the Latin alphabet of words belonging to the languages from which the names in question are derived; or (b) to provide (as will be unavoidable if any emendation is to be permitted) for the power of emendation on the foregoing grounds to be vested in the International Commission on Zoological Nomenclature in the case of names belonging to this class which are derived from languages, for the transliteration of words from the alphabets of which no guidance is given in the Schedules to the *Règles*, at the same time providing that names consisting of words incorrectly transliterated from alphabets, for which rules for transliteration are provided in the Schedules to the *Règles* shall be subject to compulsory (automatic) emendation in accordance with the rules given in the Schedules. Either of these solutions would be satisfactory in the sense that each would give clear-cut unequivocal results, but the second has the advantage that it would secure the correction of errors of transliteration in the case of names where such correction could not lead to confusion or cause inconvenience to the non-classically trained zoologist but would at the same time be welcome to those zoologists who possess a knowledge of the Classical Languages.

(d) Spelling mistakes

30. Ambiguity of the expression "faute d'orthographe" as used in Article 19 of the "Règles": We come now to the second of the main categories of error at present recognised in Article 19 of the *Règles* as requiring emendation—the "faute d'orthographe." Before passing to consider what provisions should be inserted in the revised scheme in relation to this type of error, we must note that, although the expression "faute d'orthographe" means no more than a spelling mistake of any kind, it has often been incorrectly interpreted in the context of Article 19 as referring only to one special type of spelling mistake, namely the mistake which arises when the person writing a word inadvertently spells it in some incorrect manner—that is, the so-called *lapsus calami*. The origin of this misconception is not far to seek, for the expression "*lapsus calami*" was used incorrectly in the English translation of the substantive French text of Article 19 published in 1905. It is unfortunate that specialists should have been misled by the erroneous use of this expression in the English translation of the *Règles*, but it is extremely lucky that the expression "faute d'orthographe" and not the expression "*lapsus calami*" was used in the substantive text, for the latter expression would have been extremely unsuitable to employ in this context owing to the further subjective element which it would have imported into Article 19. If the expression "*lapsus calami*" had been used, it would have been necessary not only to consider whether a given spelling mistake was "évident" (this test owing to its subjective nature being extremely unsatisfactory), but also whether it had

been made through inadvertence or carelessness on the part of the author (a subjective test which could hardly ever have been applied with certainty). Moreover, the result would have been illogical in the extreme, for under such a provision a mistake made accidentally would have been subject to emendation, while a mistake made either deliberately or through ignorance could not have been corrected and a name comprising such a mistake could not have been emended.

31. Emendation of names containing spelling mistakes (general considerations) : Many of the considerations discussed in the preceding paragraphs in relation to errors of transliteration apply with equal force to spelling mistakes committed by authors in forming scientific names. In particular (1) it will, I think, be widely agreed that with the decline in the knowledge of the classical languages among zoologists which has occurred during the last fifty years errors in the spelling of Latin words and defects in the formation of neo-Latin words do not cause the consternation which they would have a generation or so ago and therefore that the desire to emend names containing such errors is much less general than formerly, and (2) the much greater importance now attached to ensuring stability in nomenclature than that which was manifested by the architects of the *Règles* is also operating as a factor in favour of restricting the scope within which the emendation of names on etymological or philological grounds should be permitted. It is with these considerations in mind that the various aspects of the problem involved in the emendation of names consisting of misspelt words are examined in the following paragraphs. As in the discussion of the problems arising in connection with errors of transliteration, so also here the special case presented by scientific names based upon the names of persons and places is excluded for separate consideration at a later stage (paragraphs 38-45 below).

32. Suggested institution of an objective test as the basis for the automatic correction of certain classes of spelling mistake and the emendation of scientific names containing such mistakes : When considering the question of the emendation of scientific names consisting of words erroneously transliterated into the Latin alphabet from some other alphabet, we were confronted with the complication that the question of how words should be so transliterated is one which calls for a specialised knowledge which in present-day conditions it would be unreasonable to expect zoologists to possess and by the fact at present the *Règles* contain (in the Schedules) guidance for the transliteration into the Latin alphabet of words normally written in one other alphabet only, namely the Greek alphabet. In these circumstances it was impossible to devise any objective test for the emendation of names containing errors of transliteration. Now, however, that we come to straightforward spelling mistakes, we find the position somewhat less difficult, for within a narrow field it would be possible to devise such a test. An attempt was made many years ago by the International Commission on Zoological Nomenclature to devise such a test when, for example, in *Opinion* 36 (1911, *Smithson. Publ.* **2013** : 84) it incorporated in its decision the argument advanced in the "Discussion" of the earlier *Opinion* 26 (1910, *ibid.* **1989** : 63) that an objective definition should be given to the expression "évident" as used

in Article 19 by requiring that that expression should be interpreted as requiring "the presence (in the original publication) of clear evidence that the spelling used for the name in question was erroneous." It is true that later—in other *Opinions* relating to the emendation of particular names—the International Commission discarded the criterion which it had itself laid down in the period 1910-1911, but now that the whole problem of the emendation of names has been thrown wide open, it is clearly desirable that the merits of the test indicated above should be carefully re-examined. Particular attention was given to this question by the Smithsonian Sub-Committee in its Report published in 1947, to which reference has already been made (paragraph 17 above); that Sub-Committee then recommended that Article 19 should be redrafted in such a way as to substitute for the subjective expression "évident" (which in practice had rendered that Article incapable of obtaining finality in the spelling of names) a provision which would restrict the emendation of names to cases where it was demonstrable from the original publication that a spelling mistake had occurred. The actual proposal was that the Article should be rewritten so as to provide that the original spelling of a name is to be retained, "unless it can be demonstrated from the original publication itself that there has occurred an inadvertent error, such as a *lapsus* or a copyist's or printer's error." This formula, though a great improvement upon the existing wording of Article 19, nevertheless suffers to some extent from the same weakness, for it must often be a matter of opinion whether the evidence contained in the body of a book or paper in which a misspelt name is first published is sufficient to justify the conclusion that a mistake in spelling has been unquestionably "demonstrated" by that evidence. While, for reasons explained later, I consider that the formula suggested would be too restrictive, if not supplemented in various directions, I am in full agreement with the object underlying this part of the Smithsonian proposal, but it seems to me that, if we are to have—and I think that we should have—a provision for the automatic correction of certain classes of spelling mistakes, it is essential that that provision should be based upon criteria absolutely objective in character and therefore incapable of being interpreted in more than one way. I accordingly suggest that the automatic provision to be included in the revised scheme should be limited to those cases where the author of the book containing a new name or the editor of a serial publication or other work containing such a name expressly corrects the spelling of the name in question, either in a corrigendum or in a supplementary note of an equivalent kind published in the same volume. If such a provision were to be adopted, it would, I suggest, be reasonable not to insist, in the case of a book published in parts or of a paper published in a serial publication similarly issued, that the corrigendum should be published in the same part—that is, on exactly the same date; corrections of this kind are commonly published at the conclusion of a volume published in parts and it would, I suggest, be reasonable to recognise a correction published in this way, though, in order to insure against the risk that—as occasionally happens—the publication of the concluding part of a volume is delayed for a long time (sometimes for years)—it would, I suggest, be reasonable to confine this concession to *corrigenda* included in the same volume as that in which the name itself first appeared (in its incorrect form) and published within a period of twelve months from the date on which the name in question

was published. These proposals do not apply to scientific names consisting of, or based upon, the names of persons and places, the position as regards which is discussed in paragraphs 38-45 below.

33. Classes of scientific names consisting of, or based upon, words containing spelling mistakes to which it is suggested that provisions for automatic emendation should apply: It is suggested that the provisions for the automatic emendation of scientific names consisting of words containing spelling mistakes discussed in the preceding paragraph should apply to all scientific names, other than scientific names based on the names of persons or places, irrespective of their date of publication. It is desirable, however, that one safeguard should be added to the foregoing provisions, in order to ward against the risk that the "correction" of a previously published spelling mistake given in a *corrigendum* by the author or editor concerned may itself be incorrect. This is by no means a negligible risk, especially now that so many new names are published by authors possessing little or no knowledge of the Latin language. It is accordingly suggested that an emendation made under the automatic provisions shall be final, save where, on receipt of an application from specialists, the International Commission on Zoological Nomenclature, after having given public notice in the manner suggested in paragraph 26 above and subject to the procedure there suggested, may decide either that the name, as originally published, was correctly spelt or that the original spelling was incorrect but that the altered spelling given in the *corrigendum* published by the author or editor concerned was also incorrect, in either of which cases it should be the duty of the Commission to decide how the scientific name is to be spelt.

34. Classes of scientific names consisting of, or based upon, words containing spelling mistakes which would not be eligible for emendation under the automatic provisions suggested but for the emendation of which it is desirable that means should be provided: The provision suggested in the preceding paragraph would secure in a convenient way the emendation of scientific names which were misspelt at the time that they were originally published, but where the spelling mistakes in question were corrected by the author or editor concerned. It is necessary, however, in my opinion, that this provision should be supplemented, though in different ways, by special provisions. (a) as regards scientific names, for spelling mistakes in which emendations have been published before the revised scheme comes into operation, and (b) as regards scientific names published after the coming into operation of that scheme in cases where such names contain serious spelling mistakes which were not corrected by the author or editor concerned. These special classes of case are discussed in the following paragraphs. In addition, as already noted, separate consideration needs to be given to the position of scientific names based on the names of persons and places (see paragraphs 38-45).

35. Spelling to be adopted for scientific names, other than scientific names based upon the names of persons or places, published prior to the coming into operation of the revised scheme, in cases where the names in question contain spelling mistakes which are not subject

to automatic emendation and for which emendations have been published prior to that date: We have now to consider that group of scientific names for which, prior to the coming into operation of the revised scheme, emendations have (or will have) been published on the ground that the words of which those names consist contain spelling mistakes. The provision for the automatic emendation of scientific names, in which spelling mistakes were corrected at the time of publication by the original author or editor, suggested in paragraph 33 above, will afford a means for the emendation of a certain number of names consisting of misspelt words published before the coming into operation of the revised scheme. We are left, however, with the much larger number of names which, when originally published, consisted of words containing spelling mistakes (1) which are not eligible for automatic emendation, but (2) for which emendations have been (or will have been) published before the coming into operation of the revised scheme. Many of these emendations have been adopted by specialists in the groups concerned but a much larger number have not been accepted or, if used at all, have been used only by a few authors. The position as regards this group of names is very similar to that of scientific names consisting of words containing errors of transliteration, for which emendations have been (or will have been) published prior to the coming into operation of the revised scheme—a group of names which has been discussed in paragraph 26 above. As in that case, so also in the present case, (a) it is essential to avoid the confusion and disturbance which would result either from the abandonment of long-accepted emendations or from the acceptance of emendations already published but not hitherto adopted by specialists in the groups concerned, (b) it is impossible to devise a provision of a general character which would preserve those emendations in current use but would permanently reject those that are not in use at the time of the coming into operation of the revised scheme. It is accordingly suggested that the two groups of scientific names should be treated in the same way, that is in the way proposed in paragraph 26 above. Under this proposal the initial assumption would be that any given name was correctly spelt at the time when it was originally published but there would also be provision for specialists to submit to the International Commission on Zoological Nomenclature any emendation of the name concerned published prior to the coming into operation of the revised scheme and it would be the duty of the Commission to decide whether that emendation should be accepted or rejected. The procedure to be followed by the Commission in dealing with such cases and the criteria to be followed by the Commission in reaching its decisions would be the same as those suggested in paragraph 26 in the case of names which, prior to the coming into operation of the revised scheme, had been emended on the ground that the words of which they consisted contained errors of transliteration. Finally, it is submitted that the *Recommandation* suggested (in the paragraph referred to above) to be added to the *Règles* to check the activities of mischievous name-changers should be extended to apply to names emended before the coming into operation of the revised scheme for the purpose of correcting spelling mistakes in words published as scientific names. As noted at the beginning of the present paragraph, the foregoing suggestion does not apply to scientific names based upon the names of persons and places, which are considered separately in paragraphs 38-45 below.

36. Emendation of scientific names, other than scientific names based upon the names of persons or places, published after the coming into operation of the revised scheme, where those scientific names consist of words containing spelling mistakes not subject to automatic emendation: I have suggested (in paragraph 33 above) that scientific names consisting of words containing spelling mistakes should be subject to automatic emendation only where the spelling mistake committed is corrected by the author of the name in question or by the editor of the publication in which the misspelt name was originally published and where the correction concerned is published in the same volume as the misspelt name. But it will, I think, be generally agreed that it would be illogical in the highest degree to provide (in the foregoing manner) for the emendation of scientific names consisting of words containing spelling mistakes committed by authors who (or whose editors) were sufficiently careful themselves to correct spelling mistakes, for which they were responsible, if equally serious, or more serious spelling mistakes committed by authors too careless even to correct the mistakes which they made were to be perpetuated for all time, for such a system, if it were to be tolerated, could put a positive premium upon ignorance and carelessness. For this reason alone, it will, I think, be essential that the revised scheme should contain some provision for the emendation of scientific names containing serious spelling mistakes made by authors who fail to correct mistakes which they have committed. There is a further reason why it is, in my view, desirable that there should be some mechanism for emending scientific names containing serious blunders of this kind. This is that the acceptance of the very restricted field within which, under the scheme now suggested, spelling mistakes will be subject to automatic correction (and the scientific names concerned to automatic emendation) will call for a substantial concession on the part of classically trained zoologists who attach importance to the correct spelling of Latin words, when used as scientific names. It would, in my view, be asking those zoologists to make an unreasonably heavy sacrifice from their point of view, if the revised scheme were to contain no provision at all for the emendation of scientific names consisting of misspelt words in cases where the authors of those names failed to make the required correction at the time when the scientific name concerned was published. The problem with which we are here concerned does not arise to any appreciable extent in connection with scientific names published prior to the coming into operation of the revised scheme, since it may certainly be expected that names containing a serious spelling mistake (as contrasted with an error of transliteration, a type of mistake often much more difficult to correct) will almost always have been emended before the foregoing date. The question whether an emendation so made is to be accepted or rejected will, I have suggested, be subject to the special procedure indicated in paragraph 35 above. We are left therefore with the question of the provision which should be included in the revised scheme for the emendation of scientific names published after that scheme comes into operation in cases where the words of which those names consist contain spelling mistakes. It is suggested that the problem of the emendation of scientific names belonging to this group should be dealt with in the same way as that arising in respect of the parallel group of scientific names consisting of words incorrectly transliterated into the Latin alphabet, i.e., that this

group of names should be dealt with in the manner indicated in paragraph 28 above. Such names would, under this arrangement, be incapable of being emended by any author but it would be open to anyone who was of the opinion that the word constituting a given scientific name contained a spelling mistake which ought to be corrected to make application to the International Commission on Zoological Nomenclature for the scientific name in question to be emended; it would thereupon be the duty of the Commission to give public notice of the receipt of the application in the manner indicated in paragraph 26 of the present paper and, having done so, to reach a decision in the light of the procedure suggested in that paragraph.

(e) Spelling mistakes due to printers' errors

37. The problem arising when a scientific name contains a spelling mistake as the result of a printer's error: The last of the three categories of error recognised by Article 19 as constituting grounds for the emendation of a scientific name is the "*faute d'impression*" (printer's error). The two earlier categories of error recognised by Article 19, namely (i) the errors arising from the incorrect transliteration of a word from one alphabet to another and (ii) the errors arising from simple spelling mistakes, are genuinely distinct from one another, since the former depends entirely upon the prior adoption of a set of rules for the transliteration of words from the alphabets concerned, while the latter has its roots firmly in the structure of the language itself. When, however, we turn to the category "*faute d'impression*," we find that there is no such distinction, for a printer's error (*faute d'impression*) is no more than one of a number of different ways in which a spelling mistake (*faute d'orthographe*) may arise. From the point of view of whether or not, for the purposes of zoological nomenclature, a spelling mistake (*faute d'orthographe*) was committed when a name was published, it is absolutely immaterial whether that spelling mistake was committed by the author of a name, by the typist who copied the paper, by the editor of the book or paper containing that name, by the publisher or by the printer. The recognition of the category "*faute d'impression*" as a category distinct from that of "*faute d'orthographe*" is therefore absolutely illogical and pointless. But it is more than that: such a distinction is positively objectionable, for the inclusion of this category in Article 19 has actively promoted confusion by the attempts to which it has given rise to find for the expression "*faute d'orthographe*" some narrower meaning than it in fact possesses, in order to exclude from its scope the particular type of "*faute d'orthographe*" represented by the "*faute d'impression*." As our object is to secure that the revised scheme shall be free from the obscurities and other difficulties implicit in the existing Article 19, I am of the opinion that that scheme should not deal separately with printer's errors as such but should provide generally for the treatment of spelling mistakes, thus dealing with mistakes in spelling arising from printer's errors simultaneously with mistakes of spelling due to all other causes.

(f) Question of the emendation of scientific names which consist either (1) of words based upon the names of persons or (2) of words based upon place-names

38. Both in the discussion of the procedure to be adopted in regard to the emendation of scientific names consisting of words transliterated into the Latin alphabet from some other alphabet (paragraph 25 above) and also in the later discussion regarding the procedure to be adopted for the emendation of names which, when first published, contained spelling mistakes (paragraph 31 above), I suggested that there are two classes of names which raised special problems which it would, I thought, be convenient to consider separately. The classes in question were: (1) scientific names which either consist of, or are based upon, the names of persons, (2) scientific names consisting of, or based upon, place-names. Each of the foregoing groups needs to be considered in relation to names based upon words derived from languages using alphabets other than the Latin alphabet and in relation to names where no problem of transliteration arises.

39. Emendation of scientific names consisting of, or based upon, the names of persons, where the names of those persons are normally written in some alphabet other than the Latin alphabet: In the earlier part of the present paper where consideration was given to the procedure to be adopted for the emendation of scientific names consisting of, or based upon, words transliterated into the Latin alphabet from some other alphabet, I have suggested that, for the reasons there given, the emendation of names belonging to this class should be restricted within very narrow bounds and that, except in the special case referred to below, emendations published before the entry into operation of the new scheme should be accepted as valid only when approved by the International Commission on Zoological Nomenclature, while after that date emendations on the ground of defective transliteration should be made only by the Commission, with a possible exception in the case of names published after the above date, of words transliterated from languages, for the transliteration of words from which guidance is given in the Schedules to the *Règles*, where I have suggested that it might be desirable that incorrect transliterations contained in scientific names published after the entry into force of the revised scheme should be subject to automatic emendation in accordance with the rules for transliteration contained in the Schedules, which for this purpose would need to be given mandatory force. The special class which (as explained above) was reserved for further consideration was that represented by scientific names consisting of, or based upon, the names of persons, where the names of those persons are normally written in some alphabet other than the Latin alphabet. As regards these I would suggest that, except in the case specified below, the rules relating to the emendation of scientific names of this class should be the same as those for the emendation of other scientific names consisting of, or based upon, words transliterated into the Latin alphabet from some other alphabet. The exception which I suggest should be recognised relates to scientific names of Personages (whether deities or human beings) of Greek Antiquity. What I have in mind is to secure that, irrespective of the date on which a given scientific name is published

(both when such a name was published before, and when it is published after, the entry into force of the revised scheme), a scientific name which consists of a defective transliteration of the name of a classical Greek deity or person should be subject to automatic emendation. The purpose of this suggestion is to prevent the perpetuation of such outrages as are represented by (for example) names like *Appolo* or *Apolo*, when the name intended is that of the Greek God Apollo, or *Arristides* or *Aristiddes*, when the name intended is that of the celebrated Athenian statesman Aristides. The recognition of a distinction for nomenclatorial purposes between the names of Personages of Antiquity and those of modern persons would be no novelty, for precisely the same distinction has already been recognised by the International Congress of Zoology in connection with the formation, under Article 14 of the *Règles*, of trivial names based upon the names of persons (1950, *Bull. zool. Nomencl.* 4: 200). The concession here suggested is a small one, but is, I consider, essentially reasonable. Moreover, it will be particularly welcome to classically trained zoologists, to whom errors of transliteration of this kind are peculiarly objectionable, and should make it easier for such zoologists to support the substantial restriction in the scope within which, under the scheme suggested, emendation will in future be permitted for scientific names consisting of defectively transliterated words.

40. Emendation of scientific names consisting of, or based upon, the names of persons, where spelling mistakes (as contrasted with errors of transliteration) were committed when the names in question were first published: So far as I can see, the rules suggested in the earlier part of the present paper for the regulation of the emendation of scientific names which, when first published, contained spelling mistakes, are just as suitable for cases where the scientific name in question consists of, or is based upon, the name of a person as they are for any other class of scientific names, save in one special class of case. The class which I have in mind is that which consists of scientific names which consist of, or are based upon, the names of Personages of Roman Antiquity. The perpetuation of such misspellings as *Vennus* for *Venus*, *Cesar* for *Caesar*, or *Antoninus* for *Antoninus* would be extremely objectionable to any classically trained zoologist (and also to many others); for this reason I suggest that the emendation of such names should be placed on the same footing as that recommended above (paragraph 39) for that of scientific names consisting of, or based upon, erroneously transliterated versions of the names of Personages of Greek Antiquity. I accordingly suggest that, as a small concession to those zoologists to whom the proposed restriction in the scope for the emendation of incorrectly formed scientific names is objectionable, spelling mistakes in scientific names consisting of, or based upon, the names of Personages of Roman Antiquity should be made subject to automatic emendation.

41. Emendation of scientific names consisting of, or based upon, the names of places, where the names of those places are normally written in some alphabet other than the Latin alphabet: For reasons similar to those discussed in the two immediately preceding paragraphs, I cannot see any justification for the perpetuation of errors of transliteration

of place-names of Greek Antiquity when such place-names are used as, or as the basis of, scientific names. For example, the misspelling *athennacus* or *atheneus* for *athenacus* as the trivial name of a species or sub-species taken near Athens is one which, I consider, should not be permitted; the perpetuation of such errors in scientific names would be highly distasteful to anyone possessing any classical training. I suggest therefore that in this case (as in those discussed in paragraphs 39 and 40 above), there should be provision for the automatic correction of errors of the kind under consideration through the automatic emendation of incorrectly formed scientific names of this sort.

42. Emendation of scientific names which, when first published, contained spelling mistakes, in the case of scientific names consisting of, or based upon, the names of places in the Roman World: From the point of view of the need for the correction of spelling mistakes, the names of places in the Roman World, when those place-names are used for, or as the basis of, scientific names seem to me to stand in a position exactly similar to that occupied by the names of places in Greek Antiquity, when the names of those places are incorrectly transliterated on being used for, or as the basis of, scientific names. I accordingly suggest that spelling mistakes in such names committed at the time when a given scientific name is first published should be subject to automatic correction, the name in question being thus automatically emended.

43. Suggested safeguard in relation to the automatic emendation of scientific names on the ground that those names consist of, or are based upon, either the names of Personages of Antiquity or the names of places in the Greek and Roman Worlds of Antiquity: In the great majority of cases there will be no doubt as to whether a given scientific name consists of, or is based upon, either the name of a Personage of Antiquity or upon the name of a place in the Greek or Roman Worlds of Antiquity. In view, however, of the fact that both generic names and trivial names (specific, subspecific and infra-subspecific) may consist of arbitrary combinations of letters, cases may occasionally arise where a given scientific name made up of a particular combination of letters has the appearance of being a misspelt version either of the name of a Personage of Antiquity or of the name of a place in the Antique Worlds of Greece or Rome, but in fact is not a name so based, being no more than an arbitrary combination of letters. I suggest that, in order to deal with such a contingency, the provisions relating to the automatic emendation of names of the foregoing classes (i.e., the classes specified in paragraphs 39 to 42 above) should be qualified by a proviso prescribing that, where there is disagreement among specialists as to whether a given scientific name belongs to one of these classes, the problem relating to that name is to be submitted to the International Commission on Zoological Nomenclature, whose duty it shall be to determine whether the name in question is to be emended and, if so, in what way. In order to minimise the occurrence in future of doubtful cases of this kind, it is suggested that there should be inserted in the *Règles* a *Recommandation* inviting authors, when publishing new names, (1) to state the origin of such names or, alternatively, to state that the names in question consist of arbitrary combinations of letters, and (2), in

the case of a trivial name, to state whether the name in question is a noun substantive or an adjective. The purpose of the second portion of the proposed *Recommendation* is to avoid, so far as possible, the recurrence of cases where confusion has arisen through later authors mistaking a noun for an adjective and accordingly making erroneous variations in the name in question for the purpose (as the author believed) of bringing the trivial name into grammatical agreement with the name of the genus in which the species or subspecies concerned is placed.

44. Question of the emendation of scientific names consisting of, or based upon, place-names, other than the names of places in the Greek or Roman Worlds of Antiquity: The suggestions put forward in the earlier part of the present paper contemplate that the only circumstances in which a scientific name will be subject to emendation on the ground that, as originally published, it contained a spelling mistake (as contrasted with an error of transliteration) without resort to the International Commission on Zoological Nomenclature will be when in the same volume as that in which the scientific name in question was first published, the spelling of the name is expressly emended on the ground that the name as originally published contained a spelling mistake. As I then explained (paragraph 32), the foregoing suggestion was not intended to apply to scientific names consisting of, or based upon, the names of places. We have since considered the special problem presented by scientific names consisting of, or based upon, the names of places in the Greek and Roman Worlds of Antiquity (paragraphs 41 and 42 above), and it is now necessary to consider the case of scientific names consisting of, or based upon, the names of places in the Modern World. In the great majority of cases the spelling of modern place-names has attained a high degree of stability, and in such cases no difficulty would arise in the acceptance of a rule under which a spelling change made by way of correction by the original author of a name in the same volume as that in which the name was first published would automatically replace the original spelling of the name in question. But not all modern place-names have reached this degree of stability, there being cases of polymorphism in the spelling of modern place-names and also cases of evolution in the spelling of such names. A good example of a name, the spelling of which appears at least for some purposes to be in a process of evolution, has been brought to my notice by Dr. W. J. Arkell, F.R.S. This is the place-name "Kimeridge," the name of a place of importance in geological literature. The above is the original spelling of the name of this place and the one which has been generally used by geologists; comparatively recently, however, the British General Post Office has started to spell this name as "Kimmeridge" (i.e., with a double "m") and the same spelling has been adopted by the British Road Transport Authorities. Again, there are cases where the official authorities referred to above have adopted definitely erroneous spelling variants for place-names, as in the case of the neologism "Handborough" for "Hanborough" (in Oxfordshire), a name derived from "Hananbeorg," i.e., Hana's place. It would clearly be objectionable to have a provision which left it to the discretion of individual authors whether scientific names based upon the names of such places as those mentioned above should be emended, in the case of Kimeridge, to the unaccustomed spelling Kim-

meridge, and, in the case of Hanborough, to the incorrect spelling Handborough. The foregoing considerations apply naturally with even greater to scientific names based upon the names of places normally written in some alphabet other than the Latin Alphabet. In these circumstances I suggest that the proposed provision to give valid force to the emendation of a scientific name on the ground that, as originally published, it contained a spelling mistake, when that emendation is made in the same volume as that in which the name in its incorrectly spelt form was originally published, should be limited so as to exclude from its scope scientific names based upon the names of places. Under this suggestion, the question whether any such name, as originally published, contained a spelling mistake and therefore whether it should be emended and, if so, in what way, would be a matter which could be settled only by a decision obtained from the International Commission on Zoological Nomenclature. This provision should apply to all such names irrespective of their date of publication.

45. The special type of spelling mistake which may arise from the misreading or miscopying of the name of the type locality or of the captor of a specimen at the time when a new name is devised : It often happens that (for example) a trivial name is devised by coining a neo-Latin word based upon the type locality of the specimen selected to be the holotype of a new nominal species or upon the name of the person by whom that specimen was collected. Occasionally, an author may coin a new name in this way without being fully conversant with the name of the type locality or the person by whom the type specimen was collected. In such a case the author concerned is bound to rely upon the label attached to the specimen in question or upon some similar source such as a museum register. In such circumstances there is always the possibility that through either the misreading of a manuscript source of this kind or the miscopying of a word from such a source an author accidentally coins a name which is a nonsense name in the sense that it fails to provide the indication (regarding the name of the type locality or that of the captor of the type specimen) intended and is indeed positively misleading. An example of this kind was dealt with by the International Commission on Zoological Nomenclature in its *Opinion* 63 (1914, *Smithson. Publ.* **2256** : 150) ; that *Opinion* was concerned with the trivial name consisting of the neo-Latin word "hakuensis," which was intended to indicate the name of the lake in Japan in which the type specimen of the fish in question had been caught. The actual name of the lake in question was, however, "Hakone" ; the actual specimen was labelled "Lake Hakon." It was due solely to a misreading of, or to a miscopying from, this label that the meaningless trivial name "hakuensis" had its origin. The Commission decided in the present case that the name should be corrected to "hakonensis," though (as the "Discussion" in this case shows) the Commission was far from clear as to how this case fitted into the actual provisions of Article 19. At Paris in 1948 the International Congress, on the advice of the Commission, recognised that, on the rare occasions on which a mistake of this kind is committed, it should be corrected. A mistake of the kind described above is no more than a rather special form of spelling mistake ; it differs, however, from other kinds in that, while in any given case it is clear that a mistake has been committed,

it may not always be absolutely clear how the name should be emended. Accordingly, it is suggested that this special type of spelling mistake, like other spelling mistakes in scientific names consisting of, or based upon, the names of places should not be subject to automatic emendation but should be susceptible of emendation only by the International Commission on Zoological Nomenclature. The provisional stopgap provision adopted by the Paris (1948) Congress rendering special spelling mistakes of this kind subject to automatic correction (and the scientific names concerned subject to automatic emendation) (1950. *Bull. zool. Nomencl.* **4**: 143) should, therefore, I suggest, be reversed. There is one further point which needs to be considered in relation to spelling mistakes of this special kind. This is: What shall be the status, for the purposes of the Law of Homonymy, of the original (erroneous) spelling? In other words—to take as an example the case dealt with in *Opinion* 63—would the trivial name *hakuensis* erroneously published by Günther render invalid, as a junior homonym, any later use of that name for some other fish in the genus concerned (*Leuciscus*)? I suggest that this question should be answered in the negative and that a misspelling such as Günther's *hakuensis* should have no status under the Law of Homonymy. The definition which I have suggested (paragraph 18 above) should be attached to the expression "erroneous original spelling" will secure this result.

(g) Question of the grant to the International Commission on Zoological Nomenclature of power to prescribe the adoption or, as the case may be, the rejection of emendations of any given scientific name in respect of all usages of that name in zoological nomenclature

46. Cases where an identical problem of emendation arises either with (a) two or more generic names or (b) with two or more trivial names (specific, subspecific or infra-subspecific) of taxonomic units belonging to different genera: So far we have considered the problem of the emendation of scientific names as though every such problem raises issues of a unique character peculiar to itself. But, as every systematist knows, this is not the case. For at the generic-name level it occasionally happens that there are published two or more generic names which would be absolutely identical with one another if it were not for the fact that the word of which the name consists has been transliterated into the Latin alphabet in different ways. An example of this class of case is presented by the names *Jakowleffia* Puton, 1875, *Yakorlevia* Fredericks, 1925, and *Yakovlevia* Vologdin, 1931, on which an application (Z.N.(S.)530) has already been submitted to the Commission by Dr. Helen Muir-Wood (1951, *Bull. zool. Nomencl.* **6**: 90-92). The class of case with which we are here concerned occurs much more commonly when variant forms are published of what is essentially the same word, when such a word is used as the trivial name of two or more species belonging to different genera. The question which we have now to consider and on which the views of specialists are sought is this: Where a decision is taken by the

International Commission on Zoological Nomenclature as to the correct spelling of a given word as used as the name of a given taxonomic unit (whether a nominal genus or a nominal species or lower taxonomic category) should the ruling so given apply only to the spelling of the name of the taxonomic unit in respect of which the application to the Commission was submitted or should it apply also to every use of the word in question as applied to other taxonomic units? To restrict such a ruling to the individual case in respect of which it was actually raised would have the disadvantage that, if the word in question were commonly used as a name for taxonomic units and if the spelling error concerned were one commonly committed, a great deal of repetition and unnecessary work would be involved if it were necessary for the Commission to cover the same ground again and again in relation to each separate use of the same word. From this point of view it would be a great convenience if the Commission were to be expressly empowered not only (as at present) to give rulings in regard to the emendation of names as applied to individual taxonomic units but also to give rulings in regard to the spelling to be adopted for groups of identical names. On the other hand, it is possible that a case might arise where, owing, for example, to deeply embedded habit on the part of specialists concerned, the Commission might think it desirable in some given case to authorise the maintenance of an erroneous spelling, while thinking it desirable in the case of uses of the same name for other taxonomic units to direct that the name in question should be emended to its correct form. Such cases would, no doubt, be extremely rare and it may therefore be felt that they could be dealt with on their merits by the Commission under its plenary powers when they arose. If this were to be the general view on this matter, time and convenience would be served and money saved if the Commission were to be granted power to prescribe the adoption, or alternatively the rejection, of emendations of any given name in respect of all usages of that name in zoological nomenclature.

(h) Suggested general form of the revised scheme and proposed definition of two expressions

47. Proposed definition in the "Règles" of the expressions "faute de transcription" and "faute d'orthographe": In the introductory portion of the present paper I have shown (paragraph 5) that the principal reason for the failure of the existing Article 19 to provide a sure means for determining whether a given name should be emended or not is the subjective character of the tests laid down in that Article for determining this question and I have expressed the opinion (paragraph 12) that it is essential that the phraseology to be employed in the revised scheme should be absolutely unambiguous, bearing a meaning which is beyond possibility of question. Having now completed our review of the problems involved in the emendation of names for each of three categories of error specified in Article 19, we may conveniently revert to the question of the means to be adopted for ensuring that the wording used in the revised scheme is as clear as it can possibly be made. We may first note that, although Article

19 specifies three categories of error as affording legitimate ground for the emendation of a scientific name, there are in fact only two categories, the third category ("faute d'impression"—printer's error) being no more than one of a number of causes which may contribute to errors belonging to the second category of error, namely the "faute d'orthographe" or spelling mistake. Thus, the problem of the emendation of names resolves itself into the question of the rules to be adopted for regulating the emendation of a name on the ground that, as originally published, the word of which that name was composed contained not any one of three, but either of two, types of mistake, those mistakes being either (1) a "faute de transcription" (error of transliteration) or (2) a "faute d'orthographe" (spelling mistake). Second, we have to note that both the expression "faute de transcription" (paragraph 22) and the expression "faute d'orthographe" (paragraph 30) have at different times been interpreted in different ways by different authors. In these circumstances it appears to me essential that the revised scheme should contain precise definitions of the meanings to be attached to the foregoing expressions. The definitions which I suggest should be adopted are the following:—

<i>Expression</i>	<i>Proposed definition</i>
"faute de transcription" (error of transliteration)	any spelling mistake due to the adoption of an erroneous method of transliterating a word into the Latin alphabet from some other alphabet.
"faute d'orthographe" (spelling mistake)	any erroneous spelling, other than a <i>faute de transcription</i> (as defined above).

48. Suggested general form of the revised scheme: We have now defined the two categories of error on account of which alone the emendation of a scientific name will, it is suggested, in future be permissible and have outlined the conditions upon which alone, it is suggested, a scientific name is to be subject to emendation. We are therefore now in a position to consider the general form which it is desirable that the revised scheme should take. For the reasons explained in the earlier part of the present paper the revised scheme should, it is suggested, be such as substantially to restrict the field within which the emendation of scientific names will be permissible and also, in most cases, to reserve the right to emend names (or to approve the emendation of names) to an external authority, namely the International Commission on Zoological Nomenclature, that body being given for this purpose clear instructions as to the principles which should guide it in reaching a decision on whether, as regards any individual scientific name, emendation should be permitted or not. In these circumstances, it is, I consider, desirable that the revised scheme should commence with a Declaratory Article prescribing in the most categorical terms that the original spelling of a name is to be maintained, except and in so far as the immediately following Articles provide that in the circumstances specified in those Articles a scientific name is to be emended on the ground that the word of which that name is composed or on which it is based contained, when the name was first published, either an error of transliteration or a spelling mistake. The Articles providing for

the emendation of a scientific name should, I suggest, be three in number. The first of these Articles would prescribe the limited classes of case where a scientific name is to be subject to automatic emendation; these are the cases discussed in paragraphs 29, 33, 39-40, and 41-42 of the present paper. The second of the Articles in question would set out the procedure to be followed for determining, by reference to the International Commission on Zoological Nomenclature, whether an emendation published before the coming-into operation of the revised scheme is to be rejected or accepted; this subject is discussed in paragraphs 26 and 35 of the present paper. The third of the suggested Articles would provide that, after the coming-into operation of the revised scheme, the power to emend scientific names would be vested exclusively in the Commission. See paragraphs 34 and 42 of the present paper. A further Article would be required laying down the procedure to be followed by the Commission in dealing with applications submitted to it in regard to the emendation of names and the criteria to be followed by it in reaching decisions on such applications. As already explained (paragraph 26), the object of this Article would be, first, to ensure the maximum publicity for all such applications before any decision was taken thereon, second, to make it obligatory upon the Commission, when reaching decisions in such cases, to pay regard not so much to niceties of an etymological or philological nature as to the need for promoting stability in zoological nomenclature. Various other minor provisions would be needed if the scheme put forward in the present paper were to be approved, but these do not call for mention here, as they are set out in the summary given in paragraph 56 below and none of them in any way affects the general nature of the plan suggested. It is believed that a series of Articles such as those outlined above would be absolutely unambiguous in meaning and would provide a satisfactory basis for a scheme to replace the provisions at present embodied in Article 19. (In accordance with normal drafting practice, the definitions of the various concepts involved in the problem of the emendation of names which I have suggested (in paragraphs 17, 18, and 47 of the present paper) and which form an essential part of the plan for rendering the new provisions absolutely clear in meaning would, no doubt, be incorporated in an Article specially devoted to definitions of expressions used in the *Règles*, of which (it will be recalled) the last International Congress of Zoology agreed that a considerable number should be so inserted.)

(i) Transitional provisions

49. Confirmation of rulings already given in particular cases:

If, as has been suggested, the revised scheme for regulating the emendation of names should contain a provision repealing Article 19 in its entirety, together interpreted in the past by the International Commission on Zoological Nomenclature, some of the rulings given by the Commission in regard to individual names would cease to be correct, unless special action was taken to prevent those rulings from being invalidated. It would clearly be most undesirable that these rulings should be upset solely because of a revision of the general provisions relating to the emendation of names, for the name-changing involved

would be unaccompanied by any corresponding benefit. It is accordingly suggested that the revised scheme should contain a transitional provision maintaining and confirming the decisions in regard to the emendation of individual names recorded in *Opinions* rendered by the Commission up to that date. Similar protection should at the same time be given to emendations already accepted by the Commission when placing names on the *Official Lists*.

50. Repeal of existing provisions relating to the emendation of

names: As in any case where a given provision is completely remodelled, it will be necessary that the revised scheme for regulating the emendation of names should contain a provision repealing Article 19 in its entirety, together with the provisional stopgap modifications of, and additions to, that Article adopted by the Thirteenth International Congress of Zoology in 1948 on the basis of the recommendations agreed upon by the International Commission at its Paris Session as recorded in Conclusion 15 of the Sixth of the Meetings then held by the Commission (1950, *Bull. zool. Nomencl.* **4**: 141-144).

(j) Problems allied to, but distinct from, the problem of the emendation of names, on which it is desirable that decisions should be taken

51. There are several problems which have often been raised in discussions relating to the emendation of names but which, though allied to that problem, are logically quite distinct therefrom. Now, however, that the provisions relating to the emendation of names are to be thoroughly revised, it is desirable that the opportunity so presented should be taken for dealing also with these marginal problems. These problems are accordingly set out in the following paragraphs for the purpose of eliciting from specialists their views as to the action which it is desirable that the Commission should recommend the Copenhagen Congress to take.

52. Situation arising when two or more spellings are used for a given name at the time when that name is first published: It sometimes happens—especially in the old literature—that, at the time when a new name is first published, two or more different spellings are used for that name in the book in question, the commonest case being where one spelling occurs in the text and another on the legend to a plate. In such a case a choice must be made as to which spelling is to be accepted. Although situations of this kind have sometimes in the past been treated as though they were connected in some way with the emendation of names, the issue involved is in fact quite a distinct one, for the solution of which there is no provision in the *Règles*. It is certainly desirable that this omission should be rectified. As regards the solution to be adopted, it would seem to me that the most convenient course would be to insert an Article in the *Règles* providing that in such a case whichever of the original spellings is selected by the first subsequent

author to use the name shall be deemed to be the spelling in which the name in question was originally published, the other spellings taking rank as "erroneous original spellings." It would be necessary, if this solution were to be adopted, to lay down clearly the criterion to be adopted in determining whether any given subsequent author in fact selected one of the original spellings in preference to another. It is suggested that the criterion should be that for this purpose a selection should be deemed to have been made only if the author concerned makes it clear in some way (a) that he is aware that more than one spelling was used in the original book and (b) that from the spellings concerned he selects one to be the spelling employed. It goes without saying that, if a name selected in this way itself contained an error of transliteration (*faute de transcription*) or a spelling mistake (*faute d'orthographe*), that name would be liable to be emended in exactly the same way as if the version of the name selected in the foregoing manner had been the only version in which the name had been originally published.

53. Suggested incorporation in the "Règles" of rules relating to the formation of compound names: Professor (now Commissioner) Pierre Bonnet (Toulouse) drew attention at the Paris Congress to a number of questions relating to the formation of names consisting of compound words on which the *Règles* at present provide no guidance and in consequence there is diversity of practice among specialists as to the spelling to be adopted for the names concerned. Professor Bonnet suggested that the existing uncertainties regarding the formation of such names—and therefore the instability in this field of nomenclature—should be brought to an end by the incorporation in the *Règles* of an express provision regulating the formation of such names. Professor Bonnet's proposals which were embodied in his "Proposition 8" have since been published by the Commission (1950, *Bull. zool. Nomencl.* **3**: 185-187), to which reference is accordingly invited. These proposals included suggestions for dealing with the problems raised in connection with the connective vowel employed for linking two parts of compound trivial names and the practice to be followed for the avoidance of a hiatus in the case of compound names, the second portion of which commences with a vowel. At different times these and similar matters have been treated by some specialists as falling within the scope of Article 19 (emendation of names) and accordingly the specialists concerned have altered the spellings of such names on the ground that the original spelling was defective and required to be emended. It seems to me, however, that it would involve an undue stretching of the concept of "emendation" to bring matters of this type within the scope of Article 19 (still more, of the revised provisions to be substituted for that Article by the Copenhagen Congress). I accordingly suggest—and in this matter I therefore find myself in complete agreement with Professor Bonnet—that the logical, and therefore the proper, way to deal with this problem is not to force it artificially within the boundaries of the concept "emendation" but to deal with it (or each part of it) in a separate Article (or Articles) which would contain precise provisions as to the way in which questions of the foregoing type are to be dealt with. An Article (or Articles) of this kind, if adopted, would occupy a position exactly similar to that occupied by other Articles relating to the formation and orthography of names (i.e., Articles 14-16, 18 and 20), as regards

which, it will be recalled, the International Congress of Zoology has already decided (1950, *Bull. zool. Nomencl.* **4**: 67-68) that infringements are to be subject to automatic correction and therefore fall outside the scope of emendation.

54. Method to be adopted in the formation of adjectival trivial names based on the names of places and having the termination "-ensis": At the same time that Professor Pierre Bonnet drew attention to the problems arising in connection with the selection of a connective vowel in the case of names consisting of compound words, to which reference has been made in the immediately preceding paragraph, he drew attention also to the problem which arises in connection with the formation of adjectival trivial names, when these are based upon the names of places and are formed with the termination "-ensis" (Bonnet, 1950, *Bull. zool. Nomencl.* **3**: 197). As will be seen by reference to Professor Bonnet's paper (and as many systematists have experienced in their work) the difficulty which arises here is due to the lack of a provision in the *Règles* regulating the formation of trivial names of this type. The question here is whether the vowel "i" should be used in forming inserted between the name of the place on which the neo-Latin adjective is formed and the termination "-ensis." The problem involved is precisely the same as that which arises when a neo-Latin personal name, based upon the name of a modern person, is coined for the purposes of zoological nomenclature, a subject on which the International Congress of Zoology has ruled that the vowel "i" is not to be inserted as a connective vowel between the modern personal name (which forms the first part of the neo-Latin word) and the second declension termination "-us," and therefore that, when for the purposes of Article 14 such a neo-Latin word is cited in the genitive case and in the singular number, the word so formed is not to end with a double "i" (except where this is inevitable as the result of the modern name itself ending with the letter "i" prior to Latinisation), *Opinion* 8 (in which a ruling in the opposite sense had incorrectly been given) being at the same time cancelled (see 1950, *Bull. zool. Nomencl.* **4**: 68). This subject is mentioned here, because in the past authors have treated such neo-Latin adjectives as "*canadiensis*" as a spelling mistake and have accordingly "emended" it to "*canadensis*." As in the case discussed in the preceding paragraph, this procedure constitutes an undue strain upon the meaning of the concept "emendation" and it would clearly be much better that this problem in its various aspects should be dealt with separately in an Article to be inserted at some appropriate point in the group of Articles in the *Règles* which are concerned with the formation and orthography of names.

PART 3. SUMMARY OF PRINCIPAL CONCLUSIONS AND RECOMMENDATIONS AND REQUEST TO ZOOLOGISTS FOR COMMENT AND ADVICE

55. Principal Conclusions: Having now surveyed in detail the complex problems which need to be considered in drawing up any plan for the reform of the provisions in the *Règles* relating to the emendation of names, I am in a position to summarise as follows the conclusions which I have reached:—

- (1) The present provision relating to the emendation of names (Article 19) is seriously defective by reason of the subjective character of the tests there laid down for determining whether a given name is or is not to be emended. This has led to wide differences of opinion among zoologists as to the interpretation of this Article and in consequences to great diversity of practice in the emendation of names. Whatever decisions may be taken as to the scope within which the emendation of names is in future to be permitted, it is essential that the provisions to be included in the new Article for the purpose of giving effect to those decisions shall be defined by objective criteria and shall be free of all ambiguity (paragraphs 5, 12).
- (2) The underlying assumption in the existing Article 19 is that the spelling of scientific names consisting of misspelt Latin or Latinised words or of defectively transliterated Greek words is to be corrected and that zoologists in general possess the requisite knowledge of the Latin and Greek languages to enable them to make such corrections. During the fifty years which have elapsed since the Berlin (1901) Congress at which Article 19 was adopted, there has been a steady and progressive decline in the number of zoologists possessing a training in the Classical Languages and consequently in the importance attached by zoologists generally to securing a high standard of accuracy in the formation of names. These are tendencies of which account ought to be taken in any revised plan for regulating the emendation of scientific names on etymological and philological grounds (paragraphs 6-7).
- (3) Article 19 contemplated that scientific names should be emended, whenever they were published in a misspelt or otherwise defective form and therefore paid no regard to the need for securing stability for scientific names. In this respect Article 19 is not consistent with the growing desire on the part of zoologists for the avoidance, so far as possible, of changes in scientific names. It is important that the revised scheme for the emendation of names should pay full regard to the present general desire to secure the maximum attainable degree of stability in nomenclature (paragraphs 8-9).
- (4) For the reasons set forth above, I conclude that the general wish of zoologists will be that, in place of the existing Article 19, there shall be inserted in the *Règles* provisions for the emendation of names (a) which, by being based upon criteria of a strictly objective

character, will be free of ambiguity and will be capable of securing definite results in every case, (b) which recognise the decline, among zoologists, of knowledge of, and interest in, the Latin and Greek languages and accordingly attach less importance than hitherto to the need for emending on etymological or philological grounds names which either contain spelling mistakes or are incorrectly transliterated into the Latin alphabet, but which nevertheless ensure that, within certain clearly defined and restricted fields, mistakes of spelling or transliteration which are of a kind that would be peculiarly objectionable to the classically trained zoologist shall be capable of being emended, and (c) which, by the regard paid to the foregoing considerations are calculated to promote nomenclatorial stability by substantially restricting the field within which the emendation of scientific names will in future be permissible. The problem of the emendation of scientific names is one upon which very different views are held among zoologists, and in consequence if a generally acceptable scheme is to be devised, that scheme must be one which, while not conceding all the points sought by those who hold the most extreme points of view, nevertheless embodies all the features of each school of thought that are capable of being reconciled with one another. In other words, what is required is a compromise scheme which, by being as broadly based as it is possible to make it, will secure the maximum degree of support from all quarters. It is in the hope of securing a generally agreed settlement that the compromise scheme now submitted has been prepared for the consideration of zoologists (paragraphs 14, 15).

56. Summary of compromise suggested for the clarification of the Law of Emendation and for the restriction of the scope of that Law :

The following is a summary of the suggestions for the clarification of the Law of Emendation and for the restriction of the scope of that Law put forward in the present paper for the consideration of specialists :—

- (1) that for the purpose of reducing to the minimum the opportunities for misunderstanding the revised provisions relating to the emendation of scientific names, certain of the concepts involved should be denoted by the under-mentioned expressions, those expressions being defined as follows :—

<i>Expression</i>	<i>Definition of expression in Coll (1)</i>
(1)	(2)
"Emendation"	Any change in the spelling of a previously published scientific name, which the author of that spelling change makes clear is intentional (paragraph 17).

<i>Expression</i>	<i>Definition of expression in Col. (1)</i>
(1)	(2)
"Erroneous spelling change"	Any change in the spelling of a previously published scientific name, other than an emendation (paragraph 17).
"Valid emendation"	An emendation made in accordance with any of the methods prescribed for the emending of names (paragraph 18).
"Invalid emendation"	Any emendation, other than a valid emendation (paragraph 18).
"Erroneous original spelling"	The original spelling of a scientific name, when that spelling is subsequently rejected in favour of a valid emendation (paragraph 18).
"Error of transliteration" ("faute de transcription" in the substantive French text)	Any spelling mistake due to the adoption of an erroneous method of transliterating a word into the Latin alphabet from some other alphabet (paragraph 47).
"Spelling mistake" ("faute d'orthographe" in the sub- stantive French text)	Any erroneous spelling, other than an error of transliteration ("faute de transcription") (paragraph 47).

(2) that the main provisions in the revised scheme should be in the following general form :—

- (a) a Declaratory Article prescribing that the original spelling of a scientific name is to be maintained, except and in so far as the Articles referred to in (b) and (c) below provide that a scientific name is to be emended on account of an error of transliteration or of a spelling mistake in the word of which the name in question is composed ;
- (b) an Article specifying the classes of names which are to be subject to automatic emendation, when the words, of which the names concerned are composed, contain, as the case may be, an error of transliteration or a spelling mistake ;

- (c) an Article prescribing the procedure to be followed in determining whether an emendation published prior to the date on which the revised scheme comes into operation (hereafter referred to as the "appointed day"), other than an emendation falling in class (b) above, is to be emended ;
 - (d) an Article prescribing the procedure by which alone after the appointed day a scientific name, other than a name belonging to either of the classes specified in (a) and (b) above, may be emended on the ground that the word of which that name is composed or on which it is based contains an error of transliteration or a spelling mistake ; (paragraph 48)
- (3) that the Article referred to in (2) (b) above should provide that, where the word of which a scientific name is composed or on which it is based contains either an error of transliteration or a spelling mistake, that error or, as the case may be, that mistake is to be automatically corrected and the scientific name concerned emended :—
- (a) where the word concerned is :—
 - (i) the name of a Personage (whether a deity or a human being) of Classical Greek or Roman Antiquity ;
 - (ii) the name of a place in the Antique World of Greece or Rome, subject, in either case, to the proviso that, where there is disagreement among specialists as to whether the word in question belongs to one of the foregoing classes, the problem relating to that name is to be referred to the International Commission on Zoological Nomenclature (hereinafter referred to as the "Commission"), whose duty it shall be to decide whether the scientific name of which that name consists or on which it is based is to be emended and, if so, in what way ; (paragraphs 39-43)
 - (b) in the case of a spelling mistake, other than a spelling mistake made in a scientific name falling in class (a) above or a name consisting of, or based upon, a modern place-name, where that mistake is, within a period of twelve months, expressly corrected by means of a corrigendum or equivalent note in the same volume as that in which the scientific name was first published, subject to the proviso that, on receipt of an application by specialists, it shall be open to the Commission, subject to the procedure specified in (6) below, to declare, if it is so satisfied, that the spelling change specified in the *corrigendum* or equivalent note was itself incorrect, to direct either that the original spelling of the name be accepted or that the name be emended in some way other than that specified in the *corrigendum* or equivalent note ; (paragraphs 32, 33)

- (c) where, in the case of a scientific name published after the appointed day, the word of which that name consists or on which it is based is a word transliterated into the Latin alphabet from an alphabet, for the transliteration of words from which rules are provided in the Schedules to the *Règles* and the method of transliteration adopted is not in accordance with those rules ; (paragraph 29)

Note.—If it were to be decided to treat the emendation, after the appointed day, of all names in the same way, irrespective of whether the words of which those names consist contain errors of transliteration or spelling mistakes, item (c) would need to be deleted.

- (4) that the Article referred to in (2) (c) above should provide that, where, prior to the appointed day, an emendation has been published for a scientific name, other than a name belonging to either of the classes specified in (a) and (b) of (3) above, on the ground that the word of which that name consists or on which it is based contains either an error of transliteration or a spelling mistake, it shall be open to the Commission, on receipt of an application by specialists, to direct, subject to the procedure specified in (6) below, that the emendation so published or, if more than one emendation has been published, one of those emendations be adopted ; (paragraphs 26, 35)
- (5) that the Article referred to in (2) (d) above should provide that, save as regards scientific names belonging to any of the classes specified in (3) above, the right to emend scientific names shall be exercisable only by the Commission, acting on an application submitted by specialists and acting in accordance with the procedure specified in (6) below ; (paragraphs 28, 36)
- (6) that an Article should be inserted in the *Règles* providing that, where, under any of the provisions specified in (3) (b), (4) and (5) above, an application is submitted to the International Commission on Zoological Nomenclature either that it should direct that a given emendation published prior to the appointed day is to be accepted or, as the case may be, that it should itself emend a scientific name for which no emendation was published before the foregoing date it shall be the duty of the Commission (i) to give public notice of the receipt of the application in question in like manner as though it were an application involving the possible use of its plenary powers, and (ii), in reaching its decision in the light of the information contained in the application submitted and of any other information subsequently elicited, to pay regard

not so much to considerations of an etymological or philological character as to the nature of current nomenclatorial practice and the need for promoting stability in nomenclature ; (paragraph 26)

- (7) that in connection with the provisions specified in (4) above and in section (a) of (2) above that no emendation published prior to the appointed day is to be accepted unless and until the International Commission on Zoological Nomenclature so direct, there should be inserted a *Recommandation* urging that no emendation which is in current use at the time of the coming into operation of the revised scheme should be abandoned in favour of the original spelling of the name concerned until the question whether that emendation is to be accepted or, as the case may be, rejected has been submitted to, and decided by, the Commission ; (paragraphs 26, 35)
- (8) that, in order to meet the situation which may arise where, prior to the appointed day, an erroneous spelling change has been accepted by specialists as a valid emendation, a provision should be inserted authorising the International Commission on Zoological Nomenclature, on receipt of an application from specialists, to direct, subject to the procedure specified in (6) above, that the erroneous spelling change in question be accepted as a valid emendation ; (paragraph 21)
- (9) that there should be inserted at some appropriate point in the *Règles* a *Recommandation* recommending that, when an author publishes a new scientific name, he should (a) state what is the origin of the word selected for that name or, alternatively to state that the word in question consists of an arbitrary combination of letter, and (b), in connection with any new trivial name, to state whether the word selected for that name is a noun substantive or an adjective ; (paragraph 43)
- (10) that, in order to avoid unnecessary repetition and to save the time of the International Commission on Zoological Nomenclature and to husband its limited financial resources, a provision should be inserted in the scheme authorising the Commission, when dealing with an application relating to the emendation of a trivial name, to give a ruling not only as to the spelling of the word in question as used as the trivial name of the taxonomic unit covered by the application submitted but also as to the spelling of that word as used as the trivial name of any other taxonomic unit ; (paragraph 46)

- (11) that a provision should be inserted in the *Règles* confirming rulings in regard to the emendation of individual names by the International Commission on Zoological Nomenclature before the appointed day either in *Opinions* or when placing names on either of the *Official Lists* ; (paragraph 49)
- (12) that a provision should be inserted in the *Règles* providing for the repeal, as from the appointed day, of the present Article 19 and of the provisional amendments thereto adopted by the Thirteenth International Congress of Zoology, Paris, 1948 ; (paragraph 50)
- (13) that, concurrently with the revision of the Law of Emendation on the lines suggested in (1) to (12), there should be inserted in the *Règles* a provision that, for the purposes of the Law of Homonymy, the under-mentioned classes of name should be accorded status as follows :—

<i>Class of name</i>	<i>Status to be accorded</i>
Valid emendation	to replace the original spelling of the name concerned, to take priority as from the date of publication of the original name in its incorrect form and to be attributed to the author by whom that name was published (paragraph 19).
Invalid emendation	to rank as a separately published name, and therefore (i) to take priority as from the date on which it was published, (ii) to be attributed to the author by whom it was published, (iii) to be available as a replacement name, provided that the difference in spelling between it and the name which it was intended to replace is not so slight as to render it a homonym of that name, (iv) to render invalid, as a junior homonym, any later use of that name as a generic name or, if the name is a trivial name, any later use of that name in the genus concerned (paragraph 19).

<i>Class of name</i>	<i>Status to be accorded</i>
Erroneous spelling change	to possess no status in zoological nomenclature and accordingly not to be available as a replacement name and not to pre-occupy any later use of the name (paragraph 20).
Erroneous original spelling	to possess no status in zoological nomenclature (paragraphs 19, 45).

(14) that, concurrently with the revision of the Law of Emendation on the lines suggested in (1) to (12) above, provisions should be inserted in the *Règles* relating to the under-mentioned problems allied to, but distinct from that of the emendation of scientific names:—

- (a) an Article defining the spelling to be accepted as the original spelling of a scientific name in cases where two or more spellings were employed when a given name was first published; (paragraph 52)
- (b) an Article prescribing the procedure to be followed in the selection of connective vowels linking two parts of a compound name; (paragraph 53)
- (c) an Article prescribing the procedure to be followed in forming an adjectival name based upon the name of a place, when the termination “-ensis” is employed (paragraph 54).

57. Request to specialists for comments and advice: In the two immediately preceding paragraphs I have summarised the conclusions which I have reached as to the general principles which, I suggest, should form the foundation of any scheme for the revision of the Law of Emendation (paragraph 55) and have set out in the form of the heads of a draft scheme suggestions which I wish to put before zoologists as to the actual rules which might be adopted for regulating this matter (paragraph 56). It will be seen that, as regards the former, a more modern—because less classical—approach is suggested and one moreover which pays regard to the need for maintaining stability in the spelling of names. As regards the latter, the suggestions put forward will, I hope, be looked at not only individually but also collectively as forming constituent parts of a projected whole, for the scheme has been drafted in the hope of securing as wide as possible a measure of support and accordingly, while weighted in favour of a very substantial reduction of the field within which the emendation of names would be permissible, contains also certain provisions specially designed to meet the wishes of those zoologists, whose natural inclination would be in favour of a much wider measure of emendation than would be possible under the draft scheme now submitted.

In its broad outlines, that scheme is extremely simple; the grounds for emendation are greatly narrowed; in only a very limited range of circumstances would the automatic emendation of names be permitted; in all other cases emendations would either be subject to confirmation by the International Commission on Zoological Nomenclature or would be capable of being made only by that body, which, it is proposed, should be given instructions to ensure that, in deciding applications for the emendation of names, it should guide itself mainly by regard to current nomenclatorial practice and the wishes of interested specialists as elicited by the public notice which it is proposed should be an obligatory preliminary to the consideration of any application relating to this class of problem. With this explanation I now lay the problem of the emendation of names before zoologists for their consideration and for their comments and advice.



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IMPORTANT NOTICE

The papers published in the present Part have been prepared for the express purpose of drawing attention to certain important questions relating to the clarification, amendment and expansion of the *Règles Internationales* which will be considered by the Fourteenth International Congress of Zoology at its meeting in Copenhagen in 1953.

Interested specialists are particularly invited to furnish comments and advice on the foregoing questions, so that account may be taken of their views in the formulation of recommendations to the Copenhagen Congress.

Specialists responding to the foregoing appeal will render a double service to the International Commission on Zoological Nomenclature, if, when they furnish statements setting out their views, they will be so good as to send those statements, typewritten on one side of the page only, double-spaced and with wide margins. All such statements should be furnished in duplicate.

Unnecessary work and consequent delay are caused in the office of the International Commission, if statements on two or more subjects are sent on a single sheet of paper, owing to the copying which this involves. Correspondents are therefore particularly requested, when furnishing notes to the Commission on more than one subject, to use a separate sheet of paper for the note on each subject.

All communications should be clearly marked with the Commission's Reference Number and should be addressed to FRANCIS HEMMING, C.M.G., C.B.E., Secretary to the International Commission on Zoological Nomenclature, 28 Park Village East, Regent's Park, London, N.W.1, England.

THE BULLETIN OF ZOOLOGICAL NOMENCLATURE

The Official Organ of
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Edited by
FRANCIS HEMMING, C.M.G., C.B.E.

Secretary to the International Commission on Zoological Nomenclature



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BULLETIN OF ZOOLOGICAL NOMENCLATURE

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15th March, 1952

PROPOSED CLARIFICATION, AMENDMENT AND EXPANSION OF THE PROVISIONS IN THE " RÈGLES " RELATING TO THE FORMATION OF THE NAMES OF FAMILIES AND SUBORDINATE CATEGORIES OF SUPRAGENERIC RANK : AN APPEAL TO ZOOLOGISTS FOR ADVICE

By FRANCIS HEMMING, C.M.G., C.B.E.

(Secretary to the International Commission on Zoological Nomenclature)

(Commission's reference Z.N.(S.)357)

(For the decision by the Thirteenth International Congress of Zoology
that an investigation should be made in regard to this subject, see 1950,
Bull. zool. Nomencl. 4 : 138)

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Introductory

1. The present paper is concerned with the question of the need for the clarification, amendment and expansion of the provisions in the *Règles* relating to the formation of the names of families and subordinate categories above the generic level. This is the second of the seven questions relating to the wording of the *Règles* which the Thirteenth International Congress of Zoology at its meeting held in Paris in 1948 considered required attention but which, in its opinion, needed further study before decisions were taken thereon; that Congress accordingly requested me, as Secretary to the International Commission on Zoological Nomenclature, to confer on this subject with interested specialists with a view to the preparation of a comprehensive Report, with recommendations, for consideration by the Fourteenth International Congress of Zoology when it meets at Copenhagen in 1953.

2. In the interval which has elapsed since the Paris Congress I have taken every opportunity which has offered itself to obtain the views of specialists on the questions which will need to be dealt with in any series of Articles which the Copenhagen Congress may decide to substitute for the admittedly incomplete and otherwise unsatisfactory provisions which at present appear in Articles 4 and 5 of the *Règles*. As already explained (1951, *Bull. zool. Nomencl.* **7**: 1-3) the stage has, I consider, now been reached when a general consultation is desirable in order to elicit the widest possible expression of opinion from interested specialists as to the action which it is desirable that the Copenhagen Congress should take in this matter in 1953. For this purpose I have prepared the present paper, in which I have set out the problems which, as it seems to me, will need to be dealt with; at the same time I have put forward various suggestions for consideration. The Report on this subject which I have been instructed to prepare will need to be written during the summer of 1952, in order that it may be published in the *Bulletin of Zoological Nomenclature* in plenty of time before the Copenhagen Congress. I hope very much therefore that Nomenclature Committees of Natural History Museums and other scientific institutions will be good enough to furnish statements of the views of their members on the issues involved and they will do so not later than 31st July, 1952. Similar statements from individual zoologists will also be greatly welcomed. It is particularly requested that all such statements may be furnished in duplicate, typewritten, double-spaced and on one side of the paper only. Every such communication should be clearly marked with the reference number Z.N.(S.)357. Owing to the great difficulty often encountered in deciphering signatures, the names of all signatories should be typed; particulars should be given in each case of the professional or academic post held by the signatory.

3. **The two main groups of problem involved:** Two main groups of problem are involved in the present inquiry. These are: (1) the conditions which should regulate the naming of families; (2) the question of the provision which should be made for the naming of taxonomic categories below the family level but above the genus level. The present Articles 4 and 5 deal only with the naming of families and subfamilies, but there are other groups, for example, tribes, to which names are commonly given. In the present paper, the position as

regards the naming of families and subfamilies is accordingly treated as constituting a single problem, while the question whether the same or similar rules should be introduced for the naming of other categories between the family and genus levels is dealt with separately at a later stage.

(a) The rules governing the naming of families and subfamilies

4. Formation of family and subfamily names The substantive French text of Article 4, as adopted by the Fifth International Congress of Zoology at Berlin in 1901, provided that family and subfamily names should be formed by the addition of the terminations “-idae” and “-inae” respectively to the “radical” (=root) of the name of the type genus. This provision was modified by the Eighth Congress at Graz in 1910 by the substitution, for the word, “radical” of the word “thème” (=stem). The first of these concepts is one of great intrinsic difficulty, it often being a matter of great doubt even to learned philologists what is the root of a given word. The provision that the “radical” or root of the name of the type genus should form the foundation of the names of families and subfamilies was therefore entirely inappropriate for inclusion in a code of rules to be used by zoologists, for even at the time when the present *Règles* were adopted and classically trained zoologists were both erudite and numerous, such a provision could not have been relied upon to produce unquestionably acceptable family names in every case. The decision at Graz to substitute the word “thème” for the word “radical” represented therefore a great advance, for it is far less difficult to determine the “stem” of a Greek or Latin word than it is to determine its “root.” Even at the time of the Graz Congress this provision must have been a cause of difficulty to many zoologists, for already the decline in the knowledge of the Classical Languages was making itself felt and there were many zoologists who were unable to work out what was the stem of a given word without resort to some classically trained colleague. Over forty years have gone by since the Graz Congress and the process described above has gathered great momentum. As we have seen when considering the in some ways similar problem of the emendation of names (1952, *Bull. zool. Nomencl.* 7: 12-13) there are today large numbers of zoologists, amounting, possibly, to a majority of the whole who either do not possess sufficient knowledge to enable them to correct misspelt words of classical origin or who find the task involved, irksome and difficult. If this is the case in regard to a relatively simple matter such as the spelling of words, it must be all the more so in regard to the definitely more difficult matter of ascertaining what is, or should be deemed to be, the stem of the name of a genus proposed to be made the type genus of a family or subfamily. The existence of this difficulty was recognised in Paris in 1948 both by the Commission and by the Congress, and the latter, on the recommendation of the former sought to provide a solution by declaring that in future “the expression ‘stem’ is to be interpreted as meaning either (1) the grammatical or classical stem or (2) a part of the stem, the choice to be made in favour of whichever of the foregoing methods both shows most clearly the relationship between the generic name on the one hand and the name of the family on the other and provides the simpler and more euphonious form compatible with that relationship” (1950, *Bull. zool. Nomencl.* 4: 246). This formula was

devised partly to ease the burden imposed on the non-classicist by Article 4, partly for the purpose of promoting stability in nomenclature by preventing the changing of defectively formed but well-established family names. All will agree with the object which underlay the foregoing decision, but, as subsequent correspondence has shown—and as is indeed evident on further reflection—the particular solution selected is not satisfactory, for it lacks adequate precision and rests moreover upon criteria of a subjective character and is therefore incapable of securing final settlements as to the names to be given to families in the Animal Kingdom.

5. It must, therefore, I think, be agreed that some other method must be found for simplifying the task confronting zoologists when forming family names. For, serious and irritating as are the difficulties to the zoologist of today, those difficulties will, it may be expected, be virtually insurmountable for the zoologist of tomorrow. In view of the very large number of family names that have already been published, it seems inevitable that in its broad outlines the main feature of Article 4, namely that a family name is to be formed on the basis of the stem of the name of the type genus, must be maintained. The question to be considered is therefore how to make this provision as little onerous as possible, so far as the future is concerned, and how to secure the minimum amount of change, so far as concerns family names that have already been published in an incorrect form.

6. **Suggested addition to the “*Règles*” of a Schedule giving guidance as to the method to be followed in determining the stem of a Latin or Latinised Greek noun :** In Paris in 1948 the Commission and the Congress had under consideration the measures to be taken for enabling zoologists to ascertain the gender of nouns published as generic names, this information being required for the purpose of assigning the correct gender to adjectival trivial names. This problem is not dissimilar from that involved in the formation of family names, for in each case what is needed is a device to ease the task of zoologists not possessed of a training in the Classical Languages. The decision taken by the Paris Congress in the matter of the gender of nouns used as generic names (1950, *Bull. zool. Nomencl.* 4 : 249-250) may therefore offer a helpful suggestion as to the procedure which should be adopted as regards the formation of family names. That decision was that there should be added to the *Règles* a Schedule prescribing the gender to be assigned to the various classes of Latin nouns and Latinised Greek nouns, together with particulars of the better known of such nouns, the gender of which is different from that normally assigned to a noun of the class concerned, and that words should be inserted in Article 14 prescribing that the trivial names of species and subspecies, when adjectives, should be cited in the gender specified in the foregoing Schedule according to the gender of the word constituting the name of the genus to which they are assigned. In the difficult circumstances in which we now find ourselves, we should, I suggest, consider carefully the adoption of a similar course in relation to the formation of family names. What I have in mind—and what I desire to put forward for consideration—is that there should be added to the *Règles* a Schedule giving as precise guidance as possible as to the criteria to be adopted for determining the stem of a Latin noun or a Greek noun of each of the types

of names likely to be encountered. It is possible, no doubt, that such a list might not be absolutely complete at the outset, however great the care devoted to its preparation. Any case that might arise where the proposed Schedule failed to give the necessary guidance could however be met by submission to the Commission which, under the procedure laid down by the Paris Congress (1950, *Bull. zool. Nomencl.* 4: 136-137), could render a "Declaration" as to the stem to be assumed for a word of the class in question; the decision in any such "Declaration" would be automatically submitted to the next Congress, by which it could be inserted in the Schedule discussed above. The incorporation in the *Règles* of a Schedule of the kind suggested above would, I feel sure, be of great practical assistance to non-classically trained zoologists and would greatly simplify their task, both when judging whether existing names were correctly formed and, in particular, whenever they themselves had occasion to form a new family name.

7. Principles suggested for adoption in relation to family and subfamily names published prior to the date on which the revised scheme comes into operation: In the preceding paragraph I have suggested a possible means for simplifying the work in connection with—and, indeed, rendering quite easy—the formation of family (and subfamily) names published after the date on which the revised scheme comes into operation. There remains the problem of what should be done in regard to family and subfamily names published before that date. In the past, especially the more remote past, very many family names have been published which are unexceptionable in form, being correctly based upon the stem of the name of the type genus. Such names offer no difficulty and their position would be satisfactorily assured by a continuance, so far as they are concerned, of the provisions contained in the existing Article 4. In addition, there are however numerous family names, including some of great antiquity, which, when first published, were incorrectly formed. Of the names contained in this class, a considerable number have been emended, and of the emendations so published a large number has been accepted by specialists in the groups concerned, though there are some which have been accepted by some authors but not by others. Finally, there are, no doubt, some incorrectly formed family names which have not ever been emended. If we agree that the guiding principle should be to secure the incorporation in the *Règles* of provisions which will promote stability and render impossible the reckless changing of family names on etymological or philological grounds, the classes specified above will need to be dealt with in somewhat different ways. These are discussed in the two immediately following paragraphs.

8. Provisions suggested to be inserted in the "Règles" in relation to family names published prior to the coming into operation of the revised scheme, in cases where, prior to that date, no emendation of those names has been published: The suggestion which I desire here to put forward for consideration is that the revised scheme should contain a provision that no family name published prior to the coming into operation of the revised scheme, for which no emendation has, prior to that date, been published on etymological or philological grounds shall after that date be subject to emendation on the foregoing grounds. This general provision will give complete

security to all correctly formed family names published prior to the coming into operation of the revised scheme, and this is what everyone will desire. Unless qualified in some manner, a provision of this kind would give similar protection also to incorrectly formed family names published before the introduction of the revised scheme in every case where no emendation on the foregoing grounds had been made before that date. This also will, I think, in general, be in accord with the wishes of specialists. I have no doubt however that here and there will be found family names so badly formed that the general wish of specialists in the groups concerned will be that the name in question should be emended after the coming into operation of the revised scheme. I suggest that provision should be made in the revised scheme to deal with such cases but I feel that it will be the general wish that this provision should be such as to make it impossible for any such name to be emended, except where the need for emendation is very clearly established. What I suggest is that there should be inserted here a provision on the lines of that which I have suggested should be adopted in a somewhat similar case in connection with the emendation of generic names and trivial names (see paragraphs 26 and 36 in my paper on emendations (1952, *Bull. zool. Nomencl.* 7: 28, 38). Under the provision suggested it would be open to the International Commission on Zoological Nomenclature, on the receipt of an application from specialists, to direct that a family name published before the coming into operation of the scheme should be emended and to specify the spelling to be adopted; in such cases the Commission would be bound (as in the corresponding case relating to the emendation of generic and trivial names) to give public notice of the receipt of the application; it would be bound also, when taking decisions on such applications, to have regard, not so much to niceties of an etymological or philological character as to the need for maintaining stability and the general wishes of interested specialists.

9. Provisions suggested to be inserted in the "Règles" in relation to family names published prior to the coming into operation of the revised scheme in cases where emendations of those names had been published before that date: The class of case which we have now to consider is that of family names published before the introduction of the revised scheme in cases where those names have been emended on etymological or philological grounds before that date. The special point of difficulty here arises from the fact that in some cases the emendations that have been published have been accepted (for example in the butterflies, the emendation *HESPERIIDAE* is now generally accepted for the incorrect *HESPERIDAE*, formerly widely used), while other emendations have either not been accepted or have been accepted only by a limited number of workers (for example, again in the butterflies, the emendations *NYMPHALIDIDAE* and *PIERIDIDAE* for the familiar *NYMPHALIDAE* and *PIERIDAE*). As matters now stand, there is no means provided in the *Règles* for determining whether an emendation of a family name is correct or not, for the *Règles* contain no provision relating to the emendation of family names. It would be out of the question to provide that every emendation of a family name published before the introduction of the revised scheme should be accepted, for this would lead to the enforced acceptance of numerous emended names where the original unemended name is in general use and it is the desire of interested specialists

that it should remain in use. On the other hand, it is essential that means should be provided for securing a valid legal foundation for those emendations of family names made before the introduction of the revised scheme that are in general use. In this case also it is suggested that a solution should be found on the lines indicated for regulating the emendation of generic and trivial names. The suggestion now made is therefore that the revised scheme should provide that a family name published before the coming into operation of the revised scheme is to be deemed to have been correctly formed, save that, where prior to that date an emendation has been published for any such name, it shall be open to the Commission, on receipt of an application from specialists, to direct that that emendation or, if more than one emendation has been published, one of those emendations be accepted, in any case where the Commission is of the opinion that this is desirable in the interests of stability in nomenclature. The provision relating to the giving of public notice by the Commission of the receipt of such applications before decisions are taken thereon should, it is suggested, apply in this case also. As in the parallel provision which I have suggested should be inserted in the *Règles* in regard to emendations (1952, *Bull. zool. Nomencl.* 7: 37), it would be desirable to insert a *Recommandation* urging authors not to discard an emendation in common use in favour of the original spelling until the question of the action to be taken has been submitted to, and settled by, the Commission.

10. Provisions suggested to be inserted in the "Règles" in relation to the formation of family names published after the coming into operation of the revised scheme: We come now to the question of the provisions to be inserted in the *Règles* relating to the formation of family names published after the coming into operation of the revised scheme. Here we are no longer concerned with the problem of maintaining stability in nomenclature, for the names with which we have now to deal, being new names, cannot by definition have gathered any body of usage around them. The consideration which is relevant for this class of name is the desirability of securing provisions which are both simple and automatic in operation. For dealing with this class of name, I suggest that a course should be adopted similar to that which was in fact adopted by the Paris Congress, when it established a Schedule containing rules for determining the gender of words used as generic names (1950, *Bull. zool. Nomencl.* 4: 249-250); in other words, I suggest that, so far as concerns family names published after the coming into operation of the revised scheme, the rules in the Schedule relating to the stems of Latin words or Latinised Greek words used as the names of genera (the adoption of which I have suggested in paragraph 6 above) should be given mandatory force in relation to the formation of family names based upon the names of genera consisting of the words in question. Under this arrangement any family name published after the coming into operation of the revised scheme could be readily formed by reference to the Schedule referred to above; any family name which nonetheless was incorrectly formed would be subject to automatic emendation to bring its form into agreement with the rules laid down in the Schedule. If this suggestion were to be adopted, it would be necessary (again following the precedent set by the Paris Congress when dealing with the gender of nouns used as generic names—see 1950, *Bull. zool. Nomencl.* 4: 248-249) to add to the Schedule

discussed above arbitrary rules for determining what portion of a given word, not being a Latin word or a Latinised Greek word, when used as a generic name, is to be treated as constituting the stem of that word and therefore as being the portion of that word to which the termination "-idae" should be added, when that name forms the base of a family name.

11. Question whether the type genus of a family should be whatever is the included nominal genus which has the oldest available name : The present Article 4 lays down the rule that the name of a family is to be based upon the name of the type genus, but it contains no provision as to which genus is to be taken as the type genus of a family, when two or more genera are included in that family at the time when it is first recognised for taxonomic purposes. This ambiguity led in the past to two divergent practices in the naming of families : (1) The majority of workers regarded an author as free to select any genus to be the type genus of a family ; (2) other workers argued that, where two or more genera were included in a family the type genus of that family must be the genus which possessed the oldest available generic name. This ambiguity was resolved, so far as the existing Article 4 is concerned, by a decision taken by the International Commission on Zoological Nomenclature at its Session held in Lisbon in 1935, when it ruled (1943, *Bull. zool. Nomencl.* **1** : 35) that Article 4 does not require that the genus possessing the oldest available name should be the type genus of a family and this decision was later incorporated in the Commission's *Opinion* 141 (1943, *Ops. Decls. int. Comm. zool. Nomencl.* **2** : 55-66), in which it was categorically stated that Article 4 was to be interpreted as meaning that "an author establishing a new family is free to select as the type species of that family whatever generic unit he considers the most appropriate." This ruling was expressly incorporated into the *Règles* by the Thirteenth International Congress of Zoology at Paris in 1948 (1950, *Bull. zool. Nomencl.* **4** : 138-139). There is thus no doubt at all what is the meaning of the *Règles* at the present time in this matter. In view however of the fact that the whole of the provisions relating to the formation of family names are to be reviewed by the Copenhagen Congress, it will be desirable to pause for a moment to consider whether the provisions set out above are the most appropriate for the purpose or whether any change is desirable. If we look at this matter from the standpoint of the need for promoting stability in nomenclature, it must, I think, be agreed that an intolerable disturbance in nomenclatorial usage and consequent confusion would follow the substitution for the existing provisions of a rule which would invalidate every family name where the author of that name had, at the time when he established that family, placed in it any genus having an older available name than the name of the genus which he selected as the type genus of that family. If we look at this matter from the taxonomic point of view, we are bound to reach an exactly similar conclusion, for it is clearly most desirable that an author establishing a new family should be free to choose as the type genus of that family whatever genus he may regard as the most representative of the group of genera placed by him in that family ; this would not be possible if an author were bound to take as the type genus whichever of the included genera happened to have the oldest available generic name, for there could be no guarantee that a genus having such a name would also be thoroughly representative of the concept

represented by the new family—indeed, such a genus might stand, as it were, on the edge and it might therefore be a matter of differing opinion among later workers whether that particular genus should or should not be regarded as belonging to the same family as the other genera concerned. In such a case all the other genera concerned (assuming that they were closely allied to one another) would be constantly being removed from, or replaced in, the family concerned, according to the way in which current taxonomic ideas varied. It is bad enough when (as now) this happens owing to an author having established a family upon a non-representative genus; it would be much worse if the *Règles* were to include a provision that this situation must arise whenever a non-representative genus is included in a new family and that genus happens by chance to have an older name than that of any of the other included genera. I conclude therefore that from every point of view, whether purely nomenclatorial or partly also taxonomic, the present rule that an author establishing a new family should be free to select whatever genus he considers the most appropriate to be the type genus is greatly to be preferred to a rule under which an author would have no choice but to take as the type genus of his new family whichever of the included genera happened to have the oldest name however inappropriate that selection might be.

12. Date as from which a family name should be deemed to have been published : We shall have to consider (in paragraph 16 below) what provisions it is desirable should be included in the revised scheme for regulating the relative priority to be accorded to family names in cases where specialists consider that two or more nominal families should be united on taxonomic grounds, but, before we do so, we have to consider certain rather serious difficulties which arise in determining the dates as from which many of the more long-established families should be treated as having been established. For many family names are at present accepted as from early sixteenth century authors who were the first to recognise the need to accept supra-generic groupings for the genera concerned and applied terms to distinguish the groups so established but did not employ the termination “-idae” in forming the names or terms so devised. The question which thus calls for an answer is therefore whether a family is to be deemed to have been established and, in consequence, a family name published as from the date on which a Latin (or Latinised) term was first applied to a given group of genera, irrespective of the termination then employed for the term so used. Or should the *Règles* provide that a family name is to be deemed to have been published only as from the date on which an author recognised the concept of a family by applying to the group concerned a distinctive term having the termination “-idae”? My own feeling is that as regards the past—up to at least (say) 1850—a rule in the latter sense would be too restrictive, for it would undoubtedly lead to the upsetting of a large number of existing family names which depend for their acceptance upon the assumption that they rank for priority as from some early date when a group term, based upon the stem of the name of an included genus, was first published by some author who did not however use the termination “-idae” in forming the term which he used for denoting the new group which he recognised. Moreover, it would, I think, be too restrictive to require, as regards names published in the early period referred to above, that the term

used to denote the new group recognised should have a Latin termination, for it is, I believe, the case that in numerous instances family names are deemed to have been first published as from the date upon which some French specialist applied to those groups terms which were based upon the names of included genera but for which (in the custom in France of that day) a French termination was employed.

13. I think that almost all zoologists will agree that the basic principle to be adopted in the revision of the present (ambiguous and incomplete) provisions relating to family names is the need for finding a scheme which will be satisfactory for family names published after the introduction of the revised scheme and will also avoid extensive changing of the names of families established before that date. In these circumstances I conclude that, as in other similar cases where the *Règles* have been clarified or expanded, it will be necessary for the revised scheme to include one set of provisions for the names of families established before a given date and another set of rules for those established after that date. The general rule would naturally be that a name is to be treated as having been published as a family name only when the term used for this purpose was formed with the termination “-idae.” A provision of this kind would, I think, be perfectly safe, if applied retrospectively to names published as long ago as 1850 and in many cases also even beyond that date. In order however to avoid upsetting family names which are currently adopted as from various dates in the first half of the XIXth century—particularly such names which are reputed to date from the first three decades of the century—it would be necessary to include in the revised scheme a provision which would give a valid legal foundation to the family names belonging to this class, many of which are naturally (by reason of their age) names that have become extremely well known in the literature. It would not however be practicable to afford protection to such names by the insertion of a provision which dispensed with the requirement, in the case of a name published before 1850, that it should have been published with the termination “-idae”; for this would admit to the status of a valid family name very large numbers of expressions used in a supra-generic sense in the early years of the last century which have never been accepted by later workers as having been published as family names. It is suggested that this difficulty might be overcome by the insertion in the revised scheme of a provision that a family is to be deemed to have been established, only when a name bearing the termination “-idae” has been published for the supra-generic group concerned, save that, in the case of families which prior to the introduction of the revised scheme have been treated as having been established by the publication before 1850 of a term not bearing the foregoing termination, it shall be open to the International Commission on Zoological Nomenclature, on receipt of an application from specialists, to direct that the family is to be treated as having been established as from the date of the publication of a term not bearing the termination “-idae.” Such a provision would be in harmony with existing practice and would ensure against the risk of well-known family names being overthrown on purely technical nomenclatorial grounds. It is suggested that, if such a provision were to be adopted, it should be accompanied by a further provision regarding (i) the giving of public notice by the Commission of the receipt of such applications and (ii) the criteria to be

followed by the Commission in dealing with such applications similar to that which I have already suggested (see pp. 28 and 38 of the present volume) should be adopted by the Commission, when dealing with applications relating to the emendation of scientific names. It is suggested that, in order to minimise the risk of unnecessary name-changing, the *Recommendation* deprecating hasty action in discarding existing nomenclatorial practice pending a decision by the Commission suggested in paragraph 9 above should be extended to cover also cases where undesirable and unnecessary changing of family names as the result of the provision suggested above in relation to the termination to be used in order to qualify a term for acceptance as a family name might occur if existing practice were to be abandoned before the question at issue had been submitted to, and decided by, the Commission.

14. Priority to be assigned to a family based upon a given typespecies when the name of that family is changed because the generic name, on the stem of which that family name was based, is found not to be the oldest name applicable to that genus : The fact that family names have no separate existence of their own apart from the name used for the type genus at the time when the family in question was established gives rise to an awkward situation when later it is found that that generic name is not the oldest name objectively applicable to that genus. Article 5 provides that the name of a family is to be changed when the name of its type genus is changed, but unfortunately nothing is said in the *Règles* on the question of the priority to be assigned to a family name which is changed for the foregoing technical reason. The following is a representative example of a situation of this kind drawn from my own experience in the butterflies. In 1827 Swainson established a family based upon the nominal genus *Erycina* Fabricius, 1807, and accordingly applied the name ERYCINIDAE to that family. Later it was found that the generic name *Erycina* Fabricius, 1807, was invalid, being a junior homonym of *Erycina* Lamarek, 1805, in the Phylum Mollusca; the generic name *Erycina* Fabricius was on this account correctly replaced by a substitute name *Riodina* Westwood, 1851. It was not however until 1895 that A. R. Grote changed the name of the family to RIODINIDAE, and it was another thirty years or more before the name RIODINIDAE succeeded in completely ousting the name ERYCINIDAE, for the family, the type genus of which has *Papilio lysippus* Linnaeus, 1758, as its type species. The question is whether the family typified by the foregoing species is to be regarded for the purposes of nomenclature as having been first established in 1827 when Swainson gave it the name ERYCINIDAE or in 1895 when in fact the name RIODINIDAE, the valid name objectively applicable to that family, was first published by Grote. The question is of importance, as we shall see when we come to consider the problem of the name to be accorded to a family when two or more of the included genera have been treated by previous authors as the type genera of families; for in such a case (as is actually the position in the example cited above) the substitute name (in the present instance the name RIODINIDAE) would be the oldest available name for the family if it were to rank from the year in which it was given an invalid name (in the above case, the year 1827, when Swainson gave the family the invalid name ERYCINIDAE) but would not be the oldest available name if it ranked for priority only from the date on which the valid substitute name (in the above

case, the name RIODINIDAE) was published. On taxonomic grounds it would seem very objectionable, if, as the result solely of a nomenclatorial error committed by the original author, a family as typified by a given species (in the above case, by the species *Papilio lysippus* Linnaeus, 1758) were to be displaced in favour of some other family having a different type genus; for the type species of the respective type genera might be only distantly related to one another (being referable, for example, to different subfamilies). The displacement of a family name in such cases would lead to a change in the taxonomic concept represented by the family in question, which would be objectionable and confusing and in addition might lead to an unnecessary and objectionable changing of names at the subfamily level. The general practice has, I think, been to treat such a genus as retaining its original priority, notwithstanding the fact that at some later date the actual name of the family and its type genus, but not its type species, have been changed for the technical nomenclatorial reason explained above. I recommend that provisions giving legal status to this solution should be included in the revised scheme.

15. Question whether the name of a family should be changed when the name of its type genus, though an objectively available name, is a subjective synonym of an older name applied to a different nominal genus : The question which we have now to consider is whether the name of a family should be changed when the generic name on which it is based is the oldest available name for the nominal genus concerned but is regarded by systematists (or by some systematists) as a junior subjective synonym of the name of some other nominal genus. To take a hypothetical example, let us suppose that in 1860 the nominal genus *A—us*, 1851 (type species: *X—us y—us*) is made the type genus of a family *A-IDAE*. Let us further suppose that at some later date a specialist in the group concerned comes to the conclusion that the nominal species *X—us y—us* is congeneric with the nominal species *M—a p—a*, which is the type species of the nominal genus *D—us*, 1849; he accordingly sinks the generic name *A—us*, 1850 (which is an objectively available name) as a subjective junior synonym of *D—us*, 1849. The question next to be considered is whether this later author should, on the basis of his subjective identification of the genera *D—us*, 1849, with the genus *A—us*, 1851, proceed to sink the family name *A-IDAE* and establish in its place the new family name *D-IDAE*. Cases of this kind are no doubt rare, and I cannot at the moment think of an example from my own experience; the problem is however a real one and should clearly be dealt with in some way or another in the revised scheme. Judging by the well-known tenacity shown by family names which are objectively invalid for the reason that the family name *ERYCINIDAE* is invalid in the butterflies (see paragraph 14 above), I should think it likely that in the class of case with which we are here concerned a name such as *A-IDAE* would be likely to persist, even though some authors would reject that name in favour of the name *D-IDAE*. This is a subject on which the *Règles* at present give no clear guidance, for with the loose way in which Article 5 is drafted it must be a matter of opinion whether that Article applies to a case such as that exemplified above, where the only defect from which a family name suffers—if it is to be regarded as a defect—is that specialists or some specialists subjectively identify the type genus of that family with some other nominal genus (i.e. a nominal genus with a different

type species) having an older available generic name. It is likely that cases of this kind, when they arise, will differ considerably from one another in the extent to which specialists accept the subjective view that the two nominal genera concerned are identical with another. Thus, if the *Règles* were to provide that the name of a family was to be changed, whenever an author subjectively identified its type genus with some other type genus having an older available name, it would be impossible to secure stability for the name of the family concerned. The position in this matter would be somewhat similar to that which formerly existed (or was considered by many zoologists to exist) when a species bearing a trivial name which had been rejected as a secondary homonym was transferred to some other genus and its previously rejected trivial name was restored to use, for in that case also it was impossible to obtain any finality as to the trivial name to be used for the species concerned, that name being liable to change backwards and forwards according to the subjective views held by systematists as to the genus to which the species in question should be referred. It seems to me to be essential that, as in the foregoing case, so also in the present case, the revised scheme should provide a solution which would ensure that a family name is not to be subject to constant change by reason of the subjective considerations discussed above. There are, in my view, only two main ways by which the revised scheme could ensure that this particular type of instability in nomenclature shall not arise: (1) The scheme might make it clear that a family name is not subject to change when the nominal genus upon which it is based is subjectively identified with another nominal genus having an older available name; (2) On the other hand the scheme might provide that, where the nominal genus upon which a family has been established is subjectively identified with another nominal genus having an older available name, the question whether the family name is to be changed is to be referred to the International Commission on Zoological Nomenclature for decision; if this second alternative were to be adopted it would, I think, be well to impose upon the Commission an obligation to give public notice of receipt of any such application in the same way that it is proposed that it should be required to give notice of the receipt of an application for the emendation of a scientific name (see pp. 29 and 37 in the present volume) and also to require the Commission, when reaching decisions on such cases, to be guided by the criteria suggested to be adopted when it reaches decisions on questions relating to the emendation of names. My own view is that the best course would be to combine the foregoing courses, by adopting a provision in the terms suggested in (1) above, but to make this subject to the proviso that, where specialists in the group concerned desire that in such a case the name of the family concerned should be changed, it shall be open to them to make application to the Commission accordingly. This suggestion has the merit that it would furnish in a convenient manner a provision which was equally appropriate to cases of this kind arising after the introduction of the revised scheme and to cases which had arisen prior to that date.

16. Name to be adopted for a family when two or more nominal families are united on taxonomic grounds: We have next to consider what name should be properly applicable to a given taxonomic family when two or more of its included genera are already the type genera of nominal families.

It is not clear at present what name should be given to a family when two or more previously established nominal families are united with one another in this way. Is it to be the older of the families concerned, each family for this purpose being identified by the type species of its type genus? Or is it to be the family based upon the oldest of the generic names which are the names of the type genera of any of the families concerned? The second course has in the past found certain adherents on the ground that in the present obscure state of the provisions in the *Règles* it appears to be the method most consistent with the principle of priority as laid down for generic names in Article 25. Fortunately, it is not necessary to examine the validity of this particular argument, since, in view of the decision by the Paris Congress that the whole corpus of the provisions relating to family names is to be the subject of a revised scheme, we are not bound to adopt provisions identical with those in the *Règles*, even where it can be shown—which is not the case in the present instance—that a given provision is explicitly or implicitly included in the present Articles 4 and 5. On the contrary, the purpose of the revised scheme should be to provide rules which on the one hand will be simple and clear and on the other hand will produce the most satisfactory results. Judged from this standpoint there is nothing to be said in favour of a rule which would provide that, where two or more family names are in competition with one another, preference should be given to whichever is based upon the nominal genus having the oldest available name. For it must always be an entire matter of chance whether either the oldest or the most widely used of any series of competing family names is based upon the oldest of the names of any of the genera that are the names are based upon the oldest of the names of any of the genera that are the type genera of the families concerned. Such a system would therefore be capable of producing the most undesirable results involving the most objectionable name-changing and consequent confusion, for it might often lead to the family concerned being known by a name which had hardly ever been used at all, solely because that family name was based upon a genus having an older name than any of the other genera involved. Moreover, such a system could never secure stability, for, so long as a family included any genus with an older name than that of the type genus of the family, it would be open to anyone to erect a new family on the basis of one of the genera having an older name and thereby to render necessary a further change in the name of the family. For these reasons it will, I think, be generally agreed that it would be a serious mistake to include in the revised scheme a provision that, where family names are in competition with one another, preference is to be given to whichever family name has, as its type genus, the oldest name of any of the names of the type genera concerned.

17. Since, as has been explained in the preceding paragraph, the whole question of the regulation of family names is now open, it will be convenient to pause briefly to examine the merits of another system which has in the past been advocated for determining the name to be given to any family. This is the system under which the name of any family would be based upon—that is, have as its type genus—whichever of the included genera happened to have the oldest available name. For the reasons explained in paragraph 11, this method of determining the name of a family has nothing whatever to be said in its favour; for (1) its adoption would lead at this date to wholesale changes in

currently accepted family names; (2) it would, moreover, never be capable of providing stability for the name of the family concerned, for there would always be the risk that some author might later introduce into the family some long-overlooked nominal genus having an older name than that of any of the genera till then recognised as belonging to the family in question, thereby giving rise automatically to a change in the name of the family in question, however well-known or even famous that name might be.

18. Having rejected as calculated to produce the most injurious results and to lead to the most objectionable name-changing and instability, two possible methods of determining the relative status of competing family names, we have to turn to consider what would be the position, if it were to be decided that such names were to be determined by reference to the relative dates on which the various type species concerned severally became the type species of the type genera of the families in question. The foregoing description of this possible solution is chosen deliberately in preference to a formula under which the test would be the relative dates of publication of the family names concerned, in order to ensure that the concept of a given family should retain its original priority, even if for nomenclatorial reasons the actual family name had at some time be changed, the family retaining its identity however by keeping unchanged the type species of its type genus. In other words, the formula suggested above is designed to secure that, to revert to the example cited in paragraph 14 above, the concept of the family established by Swainson in 1827 under the incorrect name *ERYCINIDAE* should rank for priority from the date of Swainson's paper, notwithstanding the fact that later it was found necessary on nomenclatorial grounds to change the name of the family from *ERYCINIDAE* to *RIODINIDAE*. In the case of all family names published after the introduction of the revised scheme, such a system would, I believe, work satisfactorily in all except the one special case discussed in paragraph 22 below; I believe that the same is true also as regards family names published since, say, the seventies or eighties of the last century. It would, however, be bound to lead to difficulties if it were to be applied to family names right back to the time when such names were first published. The difficulty which I have in mind is that discussed in paragraph 12 of the present paper, namely the difficulty of determining in the literature of the early decades of the XIXth century whether terms used by authors for suprageneric units are to be accepted as constituting family names. This particular difficulty would disappear if the solution suggested in the foregoing paragraph were to be accepted, and it would thus become easy to determine which of any number of competing family names should be accepted in preference to the other, by adopting for this purpose a rule that such names take precedence as between one another as from the date on which the type species of the type genera concerned were elevated to that position.

19. An alternative to the foregoing method would be a system under which the question of which of two or more competing family names should be accepted in preference to the others would be left to be determined by the first reviser. This course would, subject to certain safeguards, be perfectly practicable but it has several disadvantages: First, it represents an unnecessary departure from the principle of priority; second, as experience has shown in other connections,

the first reviser rule cannot be relied upon to give quick or, in all cases, certain results. This method is slow, because its adoption involves the closest possible scrutiny of the entire early literature relating to the names concerned; second, it is incapable of producing absolutely certain results, owing to the risk that must always exist that the action accepted as being that by a first reviser may not in fact be the first such action and that there may be hidden away in the older literature some different action taken by an earlier reviser. Moreover, if it were to be decided to accept the first reviser principle in this case, it would certainly be necessary to define closely the nature of the action required in order to qualify the action taken by a given author to rank as action by a first reviser. Mere use of one of the family names in preference to another would not be sufficient for this purpose and it would be necessary to insert in the *Règles* a provision making it obligatory for an author to make it clear in some way that he is aware that two or more of the included genera had previously been selected as the type genera of families and that, by the name which he is using for the family, he is selecting one of the available family names for use in preference to the other or the others. It is particularly hoped that specialists reading this paper will make a point of informing the Commission which of the two methods discussed above for determining which of two or more competing family names should be accepted in preference to the others (whether by priority, as described in paragraph 18 above or, by the mechanism of the first reviser, as described in the present paragraph) is, in their opinion, to be preferred.

20. Need for securing that the genus selected as the type genus of a family should, so far as possible, be a common and representative genus :

It sometimes happens that a new family is established upon the basis of a genus having as its type species either an existing species or a newly-described species which is either very rare or at least for a long time remains very rare in collections. Families so established are open to considerable objection owing to the difficulty encountered by later revisers in obtaining material for critical study. To ensure that, so far as possible, families are not established in this way the Thirteenth International Congress of Zoology decided to incorporate into the *Règles* as a *Recommandation* a provision originally suggested by the Commission in its *Opinion* 141 urging authors when establishing families to select as the type species of any such family "a well-known and common genus and one which occupies a central position in the family so established" (1950, *Bull. zool. Nomencl.* 4 : 139). Every taxonomist recognises the need for the adoption of the foregoing principles in the selection of the type genus of a family and there will be general agreement that the revised scheme should make provision for the inclusion of the foregoing *Recommandation* in the *Règles*. In certain cases there is no possibility of stability in nomenclature at the family name level being secured, unless special provision is adopted for this purpose, for it happens at times that there are two nominal families, the type genera of which are regarded by some authorities as belonging to different families and by others as being confamilial and the name objectively applicable to a large well-known family is junior to the name objectively applicable to a family based upon the second of the two type genera concerned, which may be some aberrant offshoot represented only by a few little-known genera and

species. In such a case, the well-known family would need to lose its accustomed and well-understood name and take on itself the name objectively applicable only to the aberrant offshoot group whenever specialists took the taxonomic view that the genera which were the respective type genera of the two nominal families concerned should be treated as belonging to a single family. It seems to me that there should be some machinery for ensuring that in such a case differences in taxonomic opinion did not have the result of rendering unavailable a well-known family name, the proper course, as it seems to me, being in such a case that it should be the lesser known and not the better known of the two family names which should be liable to disappear according to the varying view taken by specialists as to the taxonomic affinities of the type genera concerned. I suggest therefore that, in order to secure the above end, there should be inserted in the revised scheme a provision that, where specialists represent to the Commission that differences of opinion as to the taxonomic status of the families represented by any two nominal families is liable to lead to the sinking, as a subjective synonym, of a well-known family name in favour of a little-known such name, it shall be open to the Commission to direct which of the family names concerned is in such circumstances to take precedence over the other. It is further suggested that the provisions in regard to the giving by the Commission of public notice of the receipt of applications recommended in paragraph 13 and elsewhere in the present paper should be made binding also in the present class of case.

21. Question whether in all circumstances the name of a family should be based upon the name of its type genus: It will be necessary to consider whether in all circumstances the name of a family must be based upon the name of its type genus. This is essentially a question of the degree to which it is desirable that in exceptional circumstances special measures should be taken to maintain stability in family names. There are two sets of circumstances in which this problem might arise: (1) where, in defiance of the existing Article 4, a family name in current use is not based upon the name of an included genus (i.e. is not based upon the stem of the name of its type genus); (2) where it is necessary on nomenclatorial grounds to change the name of the type genus of a family but where the family name based upon the (objectively or subjectively) invalid name for the type genus is so much more widely used than the name of its type genus (on the name of which it is based) that, although it may be bearable to change the name of the type genus, there would be very strong objection to the change of the family name concerned. These problems are discussed separately below.

22. Situation arising when a family name is not based upon the name of a genus included in the family: I do not myself know of any case where a family name is based upon a word which is not also the name of a genus included in the family, but that there are such cases was brought to the attention of the Commission by my predecessor, the late Dr. C. W. Stiles, in the "Discussion" on the individual case of the name of the family containing the nominal genus *Urothoe* Dana, 1852 published in *Opinion* 133 (1936, *Smithson. misc. Coll.* **73** (No. 8) : 42), and it was for this reason that under the decisions

taken by the Commission at Lisbon in 1935 (1943, *Bull. zool. Nomencl.* **1** : 35) a saving provision in favour of family names of the foregoing type was entered in *Opinion* 141 (1943, *Ops. Decls. int. Comm. zool. Nomencl.* **2** : 57) in the following terms: "Note:—There are a few well-established family names proposed by early authors where the foregoing principle, i.e. the principle that the name of a family must be based upon the name of its type genus has not been observed. Such names should be treated as exceptions. Any case of doubt should be referred to the Commission." This matter was further considered in Paris in 1948 when the Commission recommended, and the Congress agreed, that a *Recommandation* in the following terms should be added to the portion of the *Règles* relating to family names: "Where a well-established family name has not been formed in accordance with (iii) above [i.e. not in accordance with the principle indicated above] but where it would be undesirable to change existing practice, authors should, before making any such change, refer the question to the International Commission on Zoological Nomenclature for such action as it may think proper" (1950, *Bull. zool. Nomencl.* **4** : 139). It will be seen from the foregoing that the Commission and the Congress have recognised, in principle, the need for special action in relation to names of families not based upon the names of included genera in cases where the families in question are well known and well established. Before considering how this question might best be dealt with in the revised scheme, it will be convenient if we pause to consider the position as regards the second of the two classes of case specified in paragraph 21 above.

23. Situation arising when a well-known family name becomes invalid through the name of its type genus being found to be invalid :

It has been suggested that, where the name of a genus which is the type genus of a family is found to be invalid, no serious confusion (and, within the field of systematics strictly defined, no confusion) would arise if the name of the genus were to be changed as required by the Law of Priority, but that serious inconvenience and confusion—the latter especially among workers in the general fields of biological investigation—would arise if the family name itself were to be changed by being based upon the stem not of the invalid name for its type genus (as hitherto) but upon the valid name for that genus now to be brought into use. Those who have advocated this view have put forward the suggestion that in such a case the name of the type genus should be changed, as required by the Law of Priority, but that the Commission should direct that the well-known family name based upon the invalid name of the type species should continue to be used. Suggestions of this kind have been put forward in regard to a number of family names in the Order Diptera (Class Insecta) which are extremely well-known but which under the normal operation of the *Règles* would need to be changed if the names published for the type genera concerned by Meigen in 1800 are to be used. An example of a suggestion of this sort that has recently been laid before the Commission is provided by the generic names *Chironomus* Meigen, 1803, and *Tendipes* Meigen, 1800, where it has been proposed that the generic name *Tendipes* Meigen should replace its objective junior synonym *Chironomus* Meigen but that in spite of this the extremely well-known family name CHIRONOMIDÆ should be retained in preference to the name TENDIPEDIDÆ, by which strictly it should be replaced (1951, *Bull. zool. Nomencl.* **2** : 152). It is

not proposed here to offer any comment on the actual proposal cited above ; it is quoted solely to show that it has been suggested from responsible quarters that action on the foregoing lines would in certain circumstances be desirable.

24. Provision suggested for inclusion in the revised scheme in relation to family names not based upon the stem of the objectively valid name of its type genus : In the preceding paragraphs we have considered two classes of cases which, though different from one another, nevertheless raise only a single nomenclatorial problem. In the first of these cases the problem was concerned with family names not based upon the stem of the name of an included genus, in the second, with family names not based upon the stem of the oldest available name of an included genus (the type genus of the family). In each of these cases the only nomenclatorial issue is whether circumstances are ever so exceptional that it is desirable to waive the requirement that a family name must be based upon the oldest objectively available name for its type genus. In the first of these cases we have seen that the Commission and the Congress have hitherto taken the view that there may be cases where such exceptions should be made ; in the second, neither the Commission nor the Congress have as yet ever expressed an opinion but the view in favour of the making of exceptions in cases of a very special character has been strongly urged by highly responsible zoologists. In these circumstances it seems to me to be likely that it will be the general wish of zoologists that the revised scheme should include a provision which would render such exceptions possible. I believe however that it will also be found that the general feeling of zoologists is that such exceptions should be made only on very rare occasions and where the need for maintaining stability for the name of the family concerned is exceptionally strong, for the positive gain of being able at once to see from the name of a family what is its type genus is extremely great and one which, I believe, zoologists would not wish to sacrifice unless there were very strong counter-advantages to be obtained by so doing. In the circumstances, I suggest therefore that the revised scheme should include two provisions by way of safeguard : first, that exceptions should be granted by the Commission only when it is satisfied (*a*) that the family name is so well-established in the literature that in the interests of nomenclatorial stability it is essential that that name should be preserved, and (*b*) that this end cannot be more readily achieved by validating the generic name on which the family name in question is based ; second, that the power to grant exceptions should be limited to family names established prior to (say) 1850. I would suggest also that the requirements suggested earlier in similar cases should apply also in this matter, that is, that exceptions should be granted only on the application of specialists and that the Commission should be required to give public notice of such action before taking decisions on applications submitted.

25. Authorship of family names: If, as has been suggested, family names are in future to take precedence as between one another in accordance with a system of priority, it will be desirable that the *Règles* should provide that family names, like other names, be attributed to the author by whom they were first published and should bear the date on which they were published, save in the special case (discussed in paragraph 14 above) of a substitute family

name (i.e. a family name which has been changed owing to the discovery that the oldest available name for the type genus is not that used in the formation of the family name in question, at the time when that name was first published). For this latter class of name, I have suggested (in the paragraph noted above) that the substitute name should rank from priority as from the date of the publication of the original name. Similarly, it would, I think, be reasonable to provide that a substitute family name should be attributed to the author of the original name. Such an arrangement would raise a question as to the form of citation to be used in referring to such family names. This question is discussed in the next paragraph.

26. Citation of family names: It is suggested that the rules to be adopted for the citation of family names should follow those already prescribed for generic names, that is, that the name of the author of a family name should be cited immediately after the name of that family, without interposition of a comma or other mark of punctuation, and that, where it is desired to cite the date of a family name, that date should be added immediately after the name of the author of the family name, being separated therefrom by a comma. We have now to consider what form of citation it is desirable should be adopted for family names in those cases where it is necessary to change the name of a family consequent upon the change of the name of its type genus. As regards this, I suggest that in general it would be sufficient to insert the original name of the family in brackets—parentheses—after the family name and before the name of the author of the original author, thus “RIODINIDAE (ERYCINIDAE) Swainson, 1827.” Where however it was desired to employ a method of citation which would give the whole history of the name, the prescribed method of citation might, it is suggested, be: “RIODINIDAE (ERYCINIDAE emend. Grote, 1895) Swainson, 1827.”

27. Homonymy in family names: The present provisions of Article 4 give rise to identical names, whenever two genera, each the type genus of a family, have as their generic names words possessing the same “stem.” Various cases of this kind have been brought to the notice of the Commission; a good example, to which attention was drawn by Professor H. Boschma (Leiden) is provided by the situation of homonymy which has arisen in connection with the family name CYPRINIDAE; that family name has been formed for the family of fishes, of which the genus *Cyprinus* Linnaeus, 1758, is the type genus and for the family of molluscs of which the genus *Cyprina* Lamarck, 1818, is the type genus, both the generic names in question consisting of words having the same stem. Homonymy of this kind may not be inconvenient to specialists when it occurs in families belonging (as in the foregoing case) to widely separated parts of the Animal Kingdom, but that it should be permitted to occur is as much a reproach to zoological nomenclature as would be the co-existence of two genera, each having the same name. Preliminary consideration was given to this matter both by the Commission and the Congress at Paris in 1948, when attention was drawn to the fact that in the one case of this kind which had been considered in detail by the Commission—the case of the family names to be formed from the generic names *Merops* Linnaeus, 1758 (Class Aves) and *Merope* Newman, 1838 (Class Insecta)—a satisfactory solution had been

devised, the Commission ruling in *Opinion* 140 (1943, *Ops. Decls. int. Comm. zool. Nomencl.* **2**: 47-53) that homonymy should be avoided by the use of the name MEROPIDAE for the family of birds and of the name MEROPEIDAE for the family of insects. It was felt that the best course would be to provide means for satisfactory solutions of this kind which could not be obtained by any set rule which applied automatically to every case, irrespective of the nature of the generic names involved. It was accordingly agreed that, as a temporary measure and without prejudice to the comprehensive inquiry to be undertaken in consultation with specialists before the next Congress, there should be inserted in the *Règles* "a provision that, where the application of Article 4 led to the establishment of two or more families having the same name, the case is to be referred to the International Commission on Zoological Nomenclature, whose duty it shall be to determine the name to be applied to each of the families concerned" (1950, *Bull. zool. Nomencl.* **4**: 244). Since the foregoing decision was taken expressly as being without prejudice to the present investigation, there would be no need to include a provision on these lines in the permanent scheme which is to replace the existing Articles 4 and 5, if a more satisfactory way of dealing with the problem of homonymy in family names could be devised. But, as explained in connection with the names *Merops* Linnaeus and *Merope* Newman, it cannot reasonably be expected that generally acceptable solutions could be secured in cases of this kind, except by means of some mechanism of an extremely flexible type which made it possible to pay due regard to the special features presented by each case. It is precisely this flexibility which is provided by the procedure agreed upon in Paris and which is not obtainable by any other means.

28. Provisions proposed to be inserted in the "Règles" in relation to homonymy in family names: In the light of the considerations outlined in the preceding paragraph, I suggest that the revised scheme should provide that any family name which consists of the same word as a previously published family name is to be rejected as a junior homonym of that family name, but that, where specialists are of the opinion that the rejection of such a name would give rise to serious confusion, it shall be open to them to submit an application to the Commission that that family name be retained, and it shall then become the duty of the Commission to determine the names by which the two families concerned shall be known, subject to the proviso that, in reaching a decision in such a case, the Commission shall not direct that the same name shall be used for both the families concerned. I further suggest that, as in other somewhat similar provisions, the revised scheme should make it an obligation for the Commission to give public notice of any application received under the foregoing provision in the same way that it is now required to give public notice in relation to applications involving the possible use of the plenary powers.

29. Suggested insertion in the "Règles" of a provision for the purpose of determining whether any two family names consisting of very similar words are to be treated as homonyms of one another: One of the most difficult problems in relation to homonymy at the generic name level is how to determine whether any two very similar names are to

be treated as constituting separate names or alternatively whether the later published should be rejected as a homonym of the other, the differences in spelling involved being treated as too small to permit of the co-existence of the two names as valid names. It cannot be claimed that an entirely satisfactory solution has as yet been found for this difficult problem, though some progress was made by the Paris Congress when it laid down the rule that, except in the very limited classes of case specified in the decision then taken, any generic name which differed in spelling from any other generic name, no matter how small the difference in spelling involved, is to be treated as constituting a separate name and therefore that the later published of any two such names is not to be rejected as a junior homonym of the earlier published name (1950, *Bull. zool. Nomencl.* 4: 130-131, 161-162, 243). Since a family name is no more than a replica of the name of the type genus of the family concerned, to which a special termination has been added, it follows logically that, whatever rules may be adopted for determining whether or not any two very similar generic names are to be treated as homonyms of one another should apply also to the family names based upon those generic names. I recommend, therefore, that such a provision should be inserted in the revised scheme for regulating family names.

30. Rules for regulating the naming of subfamilies: The present Articles 4 and 5 purport to regulate the naming of subfamilies equally with the naming of families, that is, the provisions in those Articles are based upon the principle that, save as regards the terminations to be used for family names and subfamily names respectively, whatever rules are applied to the naming of units belonging to one of these taxonomic categories shall apply also to the naming of units belonging to the other category. This principle is in accordance with the current practice and is, I feel confident also, the general wish of zoologists. I accordingly recommend that the revised scheme should contain an express provision laying it down that, save in respect of those matters where express provision to the contrary is made in the *Règles*, the naming of subfamilies shall be subject to the same provisions as those governing the naming of families. The exceptions referred to above which it is suggested should be dealt with expressly in the *Règles* are two in number. These are discussed in the immediately following paragraphs.

31. Termination to be used for subfamily names: Article 4, as it stands today, provides that, for the purpose of forming the names of families and subfamilies respectively, there shall be added to the stem of the name of the type genus the termination "-IDAE" in the case of family names and the termination "-INAE" in the case of subfamily names. So far as I am aware, the foregoing provision is universally accepted by zoologists and, having regard to the need for maintaining stability in zoological nomenclature, I should without question have recommended that the revised scheme should contain the same provision in relation to the termination to be used for denoting subfamily names as that laid down in Article 4, namely that the termination "-INAE" should be used for this purpose. At this point it is necessary, however, to draw attention to the proposal submitted by Professor R. Jeannel that the termination to be used for denoting subfamily names should be

changed from "-INAE" to "-ITAE" (Jeannel, 1950, *Bull. zool. Nomencl.* 3: 164-165), a proposal which the Commission at Paris specifically agreed should be considered in the course of the present investigation (1950, *Bull. zool. Nomencl.* 4: 273). Particular attention is therefore drawn to Professor Jeannel's paper, from which it will be seen that his objection to the termination "-INAE" is its feminine form, whereas the termination "-INI" commonly used to denote the names of tribes is in masculine form. This is without doubt an illogicality and one which is particularly noticeable to (and, therefore, objectionable to) French zoologists and to zoologists of other countries, the languages of which are inflected. For my part, while I fully appreciate the force of the objections advanced by Professor Jeannel, I feel that the termination "-INAE" has now become so deeply entrenched in the literature and is so much part of the everyday language of zoologists that the balance of advantage is very definitely in favour of its retention in the revised scheme.

32. Name to be used for the nominotypical subfamily of a polytypic family: The *Règles* provide (Article 9) that the name of the nominotypical subgenus of a polytypic genus shall consist of the same word as the generic name itself and at Paris a similar provision was inserted in the *Règles* in regard to the name to be used for the nominotypical subspecies of a polytypic species (1950, *Bull. zool. Nomencl.* 4: 191). But just as up to the last Congress the *Règles* contained no provision relating to the name to be used for a nominotypical subspecies, so also the *Règles* at present contain no provision as to the name to be used for the nominotypical subfamily of a family. This omission, which was no doubt due to inadvertence on the part of the Berlin draftsmen, is clearly one which should be remedied in the revised scheme now under consideration. The general practice of zoologists has been to proceed as though the *Règles* provided that the name of the nominotypical subfamily should, apart from the difference in termination, be the same as the name of the family itself. I recommend that this practice should be given legal force by the insertion in the revised scheme of a provision that, where a family is divided into two or more subfamilies, the subfamily containing the type genus of the family shall have the same genus as its type genus and shall be known as the nominotypical subfamily of the family in question and, subject to substitution of the termination prescribed for subfamilies for the termination prescribed for families, the nominotypical sub-family of a family shall bear the same name as the family concerned.

33. Relationship to one another of family names and subfamily names: One of the most serious defects of the existing provisions relating to family and subfamily names is the lack of a provision defining the relationship to one another of names published for taxonomic units belonging to the categories family and subfamily respectively. For the two categories of lower rank the *Règles* do contain such provisions, Article 6 prescribing that generic names and subgeneric names are to be treated as being co-ordinate with one another and Article 11 laying down a similar principle in regard to the relationship to one another of specific trivial names and subspecific trivial names. It is clearly essential that the revised scheme should deal expressly with the corresponding problem in relation to family and subfamily names. In general, the practice seems to be to treat names belonging to these two

categories as being co-ordinate with one another, and this is certainly the most logical course to take. I recommend that this practice should be given legal force by means of an express provision in the revised scheme. If this proposal is adopted, a family will be deemed to have been established not only (1) when there is published a family name based upon the stem of the name of a genus which thereby becomes the type genus and having the termination "-IDAE" prescribed for family names, but also (2) when at some earlier date the same genus is made the type genus of a subfamily for which there is published a subfamily name based upon the stem of the name of the type genus and bearing the termination prescribed for subfamilies. Similarly a subfamily will be deemed to have been established with a given genus as type genus as from the date on which a family was duly established with that genus as type genus, if a later reviser places the type genus in some family having an older available name, but desires to place the genus in question in a separate subfamily other than the nominotypical subfamily.

**(b) Problem of the names to be given to taxonomic units
(other than subfamilies) belonging to categories below
family rank but above generic rank**

34. The scope of the problem: So far, we have considered the question of the regulation of the names to be given to taxonomic units belonging to one category only below the family level but above the genus level, namely the subfamily. But there are other categories intermediate in rank between families and genera, to taxonomic units belonging to which names are applied. At present such names possess no standing of any kind in zoological nomenclature. This is clearly illogical, for the *Règles* ought certainly to contain provisions regulating the names to be given to taxonomic units belonging to all categories downwards from the highest category recognised in the *Règles*, at present the category family. For this reason alone any scheme for the clarification, amendment and extension of the provisions relating to family names would be incomplete if it contained no provisions relating to the categories here in question. One of these categories is the "tribe," which is very widely recognised by zoologists, and it is clearly of great importance that the revised scheme should contain provisions which will give legal force to the general practice which has grown up in this matter. As already explained, I consider that it would be illogical not at the same time to make provision for the naming of taxonomic units belonging to the other subcategories concerned, even though some of them are not at present widely recognised. The whole tendency of modern classification is to increase the number of intermediate categories, in order thereby the more clearly to bring out what are believed to be phylogenetic relationships. It may be expected therefore that, as time goes on, the subcategories with which we are here concerned will acquire an increasing acceptance and, in consequence, from a nomenclatorial point of view, an enhanced importance. There is a considerable diversity in the terminology used to denote some of these concepts and, in dealing with this question, it will be necessary therefore to avoid the use of phraseology which, if interpreted ritualistically, would bring some but not

all of the names published for units belonging to these subcategories within the scope of the provisions to be laid down. The aim must be to ensure that, whatever term an author may use when publishing a name for a unit belonging to any of these subcategories, the rules shall be so worded as to apply in an appropriate manner to the name so published. Broadly speaking, there are, it seems to me, three categories which it will be necessary to consider: (1) the category or group of categories which are distinguished, by whatever term, as being below full subfamily rank but above the rank of a tribe; (2) the category or group of categories which are distinguished, by whatever term, as being so much below the rank of a subfamily as to belong to the rank known as a tribe; (3) the category which is distinguished, by whatever term, as being so much below the rank of a tribe as to belong to the rank of supergenus. These categories or groups of category are dealt with from the nomenclatorial point of view in the following paragraphs.

35. Subcategories below that of a subfamily but above that of a tribe: It is suggested that the revised scheme should provide that, where it is desired to give a name to a taxonomic unit belonging to a category lower than that of a subfamily but higher than that of a tribe in the broad sense of that term (i.e., a category above that of supertribe or equivalent), the name to be given to that taxonomic unit is to be formed in like manner as though that unit belonged to the category subfamily. It should further be provided that names so given are to be subject to the same rules as the names of subfamilies and are to be co-ordinate with such names. A provision on the foregoing lines, being drafted by reference to the concepts to be named rather than by reference to the terms used to denote those concepts should suffice to provide all that is required in connection with the names for taxonomic units belonging to the group of categories concerned.

36. Subcategories centring around the category "tribe": The concept represented by the category tribe is very widely recognised by zoologists, and provision for the naming of taxonomic units belonging to this category must certainly be included in the revised scheme, in view especially of the fact that the special termination "-INI" is habitually used to denote tribes, although in actual fact the *Règles* contain no provisions of any kind relating to the naming of tribes and names so given possess accordingly no status in zoological nomenclature. In order to regularise the position in this matter by bringing the legal position into line with current practice, it is suggested that the revised scheme should provide (1) that the name of a tribe is to be formed by the addition of the termination "-INI" to the stem of the name of the type genus of the tribe concerned, (2) that the names of tribes are to be subject to the same rules as, and are to be co-ordinate with, the names of families and subfamilies. Point (2) would have the effect, *inter alia*, of providing—as it is clearly desirable should be provided—that the nominotypical tribe of a family (i.e., the tribe containing the type genus of the family concerned) is to have as its type genus the same genus as that which is the type genus of the family and its name is to be formed by the addition of the prescribed termination to the stem of the word of which the name of that genus consists. Finally, it will be necessary to provide that the foregoing rules shall apply not

only to names published by authors as the names of tribes, but also to names applied to taxonomic units belonging to categories representing the same concept as that denoted by the word "tribe" in cases where the author publishing the name applied some expression other than the expression "tribe" to the category so named, including cases where the author in question designated that category as being either a "supertribe" (or its equivalent) or as a "subtribe" (or its equivalent). This object could probably best be secured by the insertion in the *Règles* of a comprehensive definition of the expression "tribe name" on the above lines.

37. The category "supergenous": References occur in the literature to the category "supergenous," but I have been unable to trace any group in which this category is commonly accepted. Nevertheless, it would be both illogical and inconvenient if no provision were to be included in the revised scheme for the naming of units regarded as belonging to this category, since the aim of the revision of Articles 4 and 5 contemplated by the Paris Congress was that that revision should be comprehensive and should contain appropriate provisions relating to the naming of taxonomic units belonging to all recognised categories of the "family" group. In spite of its name, the "supergenous" must, I think, be regarded as belonging to this group of categories, for, so far as I am aware, it has never been suggested that the genus should be divorced from its position as the principal basic category above the species level and as the category which occupies the unique position of providing the first part of the specific name (binominal combination of generic name and trivial name) of every species.

38. Provisions suggested to be included in the scheme in relation to the names of "supergenera": For the reasons explained above I feel that it would be a mistake to omit from the revised scheme all reference to the naming of units recognised as belonging to the category "supergenous," even though the concept represented by that category appears to have acquired only a very limited degree of acceptance. This does not seem a sufficient reason for making no reference to this category, for like (for example) the allied category "tribe," the category "supergenous" would in no circumstances be more than, as it were, an optional category for use by those specialists who might find the recognition of such a layer between tribes and genera convenient as a method of expressing their views as to the taxonomic affinity of the species that they were dealing with. Thus, the inclusion in the *Règles* of a provision governing the naming of supergenera would be convenient to those who might wish to recognise this category and would cause no inconvenience whatever to those who did not. It is accordingly suggested that the scheme might usefully include a provision prescribing that a name given to a supergenous is to be treated as being co-ordinate with a name given to a tribe or higher category up to and including the category "family." It is suggested, however, that supergeneric names should rank for priority *inter se* by reference to the dates on which they were respectively published as such. This qualification appears to be desirable in order to prevent the displacement of an established supergeneric name (if there were such) by the later downgrading to the supergenous level of an older name previously published as a tribe name. In all other respects supergeneric names should be subject to

the same rules as those adopted for the names of higher sub-divisions of the category "family." In order to be complete, the scheme should certainly provide for the use of a uniform termination for the names of supergenera, since in the absence of such a provision discordant practices are bound to arise (just as they have done elsewhere in the *Règles*, when some essential provision was omitted). I do not feel, however, that I am in a position to suggest what termination should be adopted for this purpose. On this subject therefore advice from specialists who find it convenient to recognise the category "super genus" will be particularly welcome.

(c) Problem of the names to be given to taxonomic units belonging to the category "superfamily"

39. Proposed introduction into the "Règles" of rules relating to the naming of superfamilies: At first glance it might be thought more appropriate to treat superfamily names as representing the lowest unit in the group of categories comprised in the "ordinal" group, rather than as a kind of upward extension of the group of categories belonging to the "family" group. On closer inspection, however, it becomes apparent that, in fact, superfamily names are much more closely related to family names than they are to names of the ordinal group, being based invariably upon the stem of the name of a genus which is already the type genus of one of the families included in the superfamily concerned. It is accordingly suggested that the revised scheme relating to the naming of families should include also provisions relating to the naming of superfamilies.

40. Termination suggested to be adopted for superfamily names: As in the case of other categories belonging to the "family" group, it would be necessary, if the concept of "superfamily" is to be recognised, for the *Règles* to contain a provision specifying the termination to be used in forming the names of taxonomic units belonging to this category. In the present instance this should not be a matter of difficulty, the termination "-OIDEA" being already widely used for this purpose, no other termination, so far as I am aware, having been employed. I accordingly suggest the revised scheme should contain a provision prescribing that the name of a superfamily is to be formed by adding the foregoing termination to the stem of the name of the type genus of one of the included families. It would follow from this provision that the scheme should provide also that the type family of a superfamily is that family which shares with the superfamily the characteristic of its name being based upon the same generic name.

41. Relationship of superfamily names to family names: Just as it is proposed that names published as subfamily names and tribe names should be co-ordinate with the names of families, so also it is proposed that names published as superfamily names should be co-ordinate with names published as family names. Since up to the present time superfamily names have not been recognised in the *Règles*, authors have been free to select any family

to be—as it were—the type family of a superfamily. No doubt in most cases authors publishing new superfamily names have formed the superfamily name in question on the basis of the name of the longest established of the families placed in the new superfamily, but it is possible that for one reason or another this course has not always been followed. Moreover, even where this course has been adopted by the author of a superfamily name, it does not follow that the family on the name of which the superfamily name is based will always remain the oldest established family comprised in the superfamily so established, for the boundaries to be assigned to a superfamily are essentially a matter for the subjective judgment of systematists and in the nature of the circumstances represents a concept, the content of which must be liable to change in accordance with changing taxonomic ideas. It follows therefore that a rule which required that the name of a superfamily must be based upon the stem of the name of the type genus of the longest established of the included families might give rise to instability in the names of superfamilies. This is something which should clearly be avoided. It is accordingly suggested that the names of superfamilies shall be co-ordinate with the names of families. It is suggested that this latter rule should be qualified by a proviso that superfamily names shall rank for priority, *inter se*, by reference to the dates on which they were severally published as such and not by reference to the relative priority of the names of the families comprised in the superfamily concerned.

42. Other regulations relating to superfamily names: It is suggested that, subject to the qualifications proposed in paragraphs 40 and 41 above, the rules to be applied to names published as superfamily names shall be the same as those for names published as family names.

(d) Proposed establishment of an “ Official List of Family Names in Zoology ” and of a corresponding “ Official Index of Rejected and Invalid Family Names ” and the addition to the “ Règles ” of a Schedule for recording the foregoing “ Official List ” and “ Official Index ”

43. Proposed establishment of an “ Official List of Family Names in Zoology ”: The International Congress of Zoology decided at Paris in 1948 to incorporate in the *Règles* a provision making it obligatory for the Commission to place on the *Official List of Generic Names in Zoology* every generic name, as regards which any decision might thereafter be taken by the Commission, in cases where the generic name concerned was both an available name and also was accepted by specialists as the oldest such name for the genus represented by the nominal genus so named; at the same time the Congress made it the duty of the Commission to maintain, and to foster the development of, the *Official List* by all means in its power (1950, *Bull. zool. Nomencl.* 4: 267-269). The same Congress established a corresponding *Official List of Specific Trivial Names in Zoology*, for the maintenance and development of which similar duties were imposed upon the Commission (1950, *ibid.* 4: 269-271). Among the duties laid upon the Commission in connection with the latter *Official List* was to place on it the trivial name (when the oldest available

such name) of the type species of every genus, the name of which was placed on the *Official List of Generic Names*. The decisions cited above in regard to the treatment to be accorded to names as respects which decisions had been, or were in future to be, taken by the Commission give a clear guide as to the wishes of the Congress on subjects of this sort and create a strong presumption in favour of the establishment, as part of the reform of the provisions now included in Articles 4 and 5 of the *Règles*, of an *Official List of Family Names in Zoology*. Quite apart from this consideration, the establishment of such an *Official List* is clearly very much to be desired, for such a *List* would not only be a great convenience to all workers but would also contribute in a powerful degree to the stabilisation of nomenclature in this important field. Such an *Official List* would indeed be of quite outstanding value and importance, since the fact that the number of accepted families in zoology is so very much smaller than the number of accepted genera should make it possible within a relatively short period of time to secure for an *Official List of Family Names* a high degree of completeness, thus ensuring at the family name level a firm framework on which to build up a stable system of nomenclature in zoology. I therefore strongly recommend that the establishment of an *Official List of Family Names in Zoology* should form a part of the revised scheme for the regulation of family names. The adoption of the foregoing proposal would carry with it also a decision that (as in the case of the existing *Official Lists*) there should be associated with the new *Official List* an *Official Index of Rejected and Invalid Family Names*, in which would be recorded every family name which was either rejected by the International Commission or declared by it to be invalid.

44. Scope of the proposed "Official List" and duties of the Commission in relation to it: It is suggested that the scope of the *Official List of Family Names in Zoology* should be similar to that of the existing *Official Lists* for names of units belonging to lower taxonomic categories, that is, that it should be established for the reception (1) of all family names as regards which the Commission either has already, or at any time in the future may, reach a decision in an *Opinion* where the family so named is accepted by specialists as necessary for taxonomic purposes and where the family name in question is the oldest available name for (and therefore the valid name of) the family in question, (2) of the name of any family similarly recognised as taxonomically required, the type genus of which is already, or at any time may be placed, on the *Official List of Generic Names in Zoology*, and (3) and any other similar family name which, on the application of specialists, the Commission may think it desirable to stabilise in this way. As in the case of the other *Official Lists*, it should be made the duty of the Commission to maintain, and foster the development of, the *Official List of Family Names in Zoology* by every means in its power. Again as in the case of the other *Official Lists*, it would be appropriate to include in the regulations governing the new *Official List* a provision directing the Commission, in cases where there is difference of opinion among specialists as to whether one, or more than one, family should be recognised in any given group, to place both or all of the family names concerned on the *Official List*, with notes attached to the entries relating to the later published family names stating that those names were placed on the *Official List* for use by those specialists who may consider on taxonomic grounds

that more than one family is involved. The regulations would naturally include a provision conferring upon any family name placed on the *Official List* a status similar to that granted to generic names and trivial names placed on the *Official Lists* established respectively for the reception of such names.

45. Consequential addition needed in the regulations prescribing the duties of the Commission in relation to the "Official List of Generic Names in Zoology": The Congress has made it the duty of the Commission to place on the *Official List of Specific Trivial Names in Zoology* the trivial name (if the oldest such name available) of the type species of any genus, the name of which is placed on the *Official List of Generic Names in Zoology*. On the analogy of this provision, it would be desirable that, concurrently with the establishment of the *Official List of Family Names*, there should be added to the regulations governing the *Official List of Generic Names in Zoology* a provision requiring the Commission to place on that *Official List* the name of any genus which is the type genus of a family, the name of which is placed on the *Official List of Family Names in Zoology*, save in the case of any family name of the class discussed in paragraph 24 above, if such a name be recognised.

46. Taxonomic categories, the names of which should be eligible for admission to the proposed "Official List": It has been suggested in the present paper that the names of superfamilies, families, subfamilies, tribes, and supergenera should all be co-ordinate with one another. The acceptance of these suggestions would carry with it the corollary that names belonging to any of these categories would be eligible for admission to the proposed new *Official List*. It is necessary at this point to consider the form to be adopted in entering names on the proposed *Official List*; as regards this, it is suggested that, irrespective of the question of the taxonomic view currently held as to which of the foregoing categories is that to which a unit bearing a given name should be referred (this being a matter on which the Commission should avoid expressing an opinion), a name placed on the *Official List* should be entered thereon in whatever form that name was first published as the name of a family, subfamily or tribe, as the case may be, but that in the case of the names of superfamilies and supergenera which it may be decided to place on the *List* the entry so made should be additional to the entry thereon of the name of the family, subfamily or tribe based upon the same generic name and therefore having the same genus as its type species. This condition is essential if the suggestion submitted in paragraph 41 above that superfamily names are to rank for priority *inter se* by reference to the dates on which those names were respectively published as such is to be accepted, for otherwise the *Official List* would fail to indicate the date as from which the superfamily name in question is to rank for purposes of priority in relation to other superfamily names. The qualification suggested above would be necessary also in relation to supergeneric names if the suggestion made in paragraph 38 as to the dates from which such names should rank *inter se* is approved.

47. Title to be given to the proposed "Official List" of the names of families: I suggest that, although it is proposed that the new *Official List*

should be open not only to the names of families but also to the names on the one hand of superfamilies and on the other hand of subfamilies, tribes and supergenera, the only one of these categories which need be expressly mentioned in the title to be given to the *Official List* is that of the family. This procedure would be in line with that adopted in relation to the *Official List of Generic Names in Zoology*, for which the names of subgenera are just as eligible as are the names of genera and in relation also to the *Official List of Specific Trivial Names in Zoology*, for which the trivial names of subspecies are just as eligible as are those of species, although, by an express decision taken in Paris (1950, *Bull. zool. Nomencl.* 4: 627-628) reference to specific trivial names is alone made in the title of that *Official List*. This decision was taken for the purpose of avoiding an unduly cumbrous title for the *Official List* and was clearly in accordance with general convenience. The same considerations apply in the case of the new *Official List* now proposed and it is accordingly suggested that the title to be adopted for that *Official List* should be the *Official List of Family Names in Zoology*. Similarly, it is suggested that the *Official Index*, the establishment of which has been suggested in paragraph 43 above, should be given the title *Official Index of Rejected and Invalid Family Names in Zoology*.

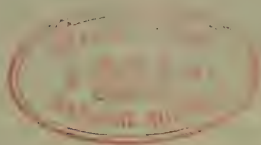
48. Status proposed to be given to the "Official List of Family Names in Zoology": Under decisions taken by the Thirteenth International Congress of Zoology at Paris in 1948 (1950, *Bull. zool. Nomencl.* 4: 333-334) each of the existing *Official Lists* will in future be incorporated in one of the Schedules attached to the *Règles*, in order thereby to mark the official status of these *Lists*. It is proposed that a similar arrangement should be followed in the case of the *Official List of Family Names in Zoology* and of the corresponding *Official Index of Rejected and Invalid Family Names*, the duties of the Commission in relation to which will need also to be specified in the *Règles* in the Article dealing with the duties of the Commission.

(e) Questions on which the advice of specialists is now sought

49. In accordance with the decision taken by the Thirteenth International Congress of Zoology, Paris, 1948, the Fourteenth International Congress of Zoology, when it meets in Copenhagen in 1953, will be presented with proposals for the insertion in the *Règles* of comprehensive provisions relating to the naming of families and cognate groups in replacement of the entirely inadequate provisions in the existing Articles 4 and 5. It is earnestly desired that the proposals so submitted should be as broadly based as possible, that is, that they should be such as to secure the widest possible measure of support among zoologists and palaeontologists. It is for this reason that I have prepared the present note in which I have set out the various problems which will need to be settled and have enumerated the suggestions which have been put forward in regard to each. The questions on which the advice of specialists is now sought are:—(1) What are your views on the various problems which arise

in connection with the naming of families and kindred categories ? In particular are you in favour of the suggestions for dealing with those problems set out in the present paper ? If not, what are the alternative courses which you would favour ? (2) Are there, in your opinion, any aspects of the family-name group of problems that are not referred to in the present paper but which ought, you consider, to be dealt with in any scheme for the clarification, amendment and extension of Articles 4 and 5 of the *Règles* ? If so, what are the aspects in question and what action do you consider it desirable should be taken in regard to them ?

50. Specialists reading the present paper who desire to place statements of their views before the Commission are asked to send those statements as soon as possible to myself, as Secretary to the Commission (address : 28 Park Village East, Regent's Park, London, N.W.1, England). Further, specialists are asked, when preparing such statements, to conform with the request as to the method of submission indicated at the end of paragraph 2 of the present paper.



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Proposed clarification, amendment and expansion of the provisions in the <i>Règles</i> relating to the formation of the names of families and subordinate categories of suprageneric rank : An appeal to zoologists for advice ..	61

IMPORTANT NOTICE

The paper published in the present Part has been prepared for the express purpose of drawing attention to certain important questions relating to the clarification, amendment and expansion of the *Règles Internationales* which will be considered by the Fourteenth International Congress of Zoology at its meeting in Copenhagen in 1953.

Interested specialists are particularly invited to furnish comments and advice on the foregoing questions, so that account may be taken of their views in the formulation of recommendations to the Copenhagen Congress.

Specialists responding to the foregoing appeal will render a double service to the International Commission on Zoological Nomenclature, if, when they furnish statements setting out their views, they will be so good as to send those statements, type-written on one side of the page only, double-spaced and with wide margins. All such statements should be furnished in duplicate.

Unnecessary work and consequent delay are caused in the office of the International Commission, if statements on two or more subjects are sent on a single sheet of paper, owing to the copying which this involves. Correspondents are therefore particularly requested, when furnishing notes to the Commission on more than one subject, to use a separate sheet of paper for the note on each subject.

All communications should be clearly marked with the Commission's Reference Number and should be addressed to FRANCIS HEMMING, C.M.G., C.B.E., Secretary to the International Commission on Zoological Nomenclature, 28 Park Village East, Regent's Park, London, N.W.1, England.

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FRANCIS HEMMING, C.M.G., C.B.E.

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BULLETIN OF ZOOLOGICAL NOMENCLATURE

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PROBLEMS REQUIRING CONSIDERATION IF PROVISIONS RELATING TO THE NAMING OF ORDERS AND HIGHER TAXONOMIC CATEGORIES ARE TO BE INCLUDED IN THE " RÈGLES " : AN APPEAL TO ZOOLOGISTS FOR ADVICE

By FRANCIS HEMMING, C.M.G., C.B.E.

(*Secretary to the International Commission on Zoological Nomenclature*)

(**Commission's reference Z.N.(S.)360**)

(For the decision by the Thirteenth International Congress of
Zoology that an investigation should be made in regard to
this subject, see 1950, *Bull. zool. Nomencl.* **4**: 386)

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Introductory

1. Introductory : The present paper is concerned with the problems which require to be considered if provisions relating to the naming of Orders and Higher Taxonomic Categories are to be inserted in the *Règles*. This is the third of the seven questions relating to the *Règles* which the Thirteenth International Congress of Zoology at its meeting held in Paris in 1948 considered required attention but which, in its opinion, needed further study before decisions were taken thereon ; that Congress accordingly requested me, as Secretary to the International Commission on Zoological Nomenclature, to confer on this subject with interested specialists with a view to the preparation of a comprehensive Report, with recommendations, for consideration by the Fourteenth International Congress of Zoology when it meets at Copenhagen in 1953.

2. In the interval which has elapsed since the Paris Congress, I have taken every opportunity that has offered to obtain the views of specialists on this subject and in this way I have collected a certain amount of valuable material. For the reasons explained in the introductory note to the present series of papers (1952, *Bull. zool. Nomencl.* **7** : 1-3), I consider that the stage has now been reached at which a general consultation is desirable, in order to elicit the widest possible expression of opinion from interested specialists as to the action which it is desirable should be taken by the Copenhagen Congress in 1953. For this purpose I have prepared the present paper in which I have set out the various problems which, as it seems to me, it will be necessary for the Copenhagen Congress to consider if, as contemplated by the Paris Congress, the naming of Orders and other Higher Taxonomic Categories is then to be brought within the scope of the *Règles* ; at the same time I have put forward various suggestions for consideration.

3. Limitations imposed by the historical background : The provision of means for regulating the names of Orders and higher taxonomic categories is one of extraordinary difficulty, for hitherto no attempt has been made either to apply the principle of priority to the names given to units belonging to these categories or to provide these concepts with a definite objective meaning by linking them for nomenclatorial purposes with a single organism to which in all circumstances the name applied to any given taxonomic unit belonging to these categories shall adhere. The present position is thus completely chaotic and can be compared only with the position which would exist in relation to generic names if workers were free both to disregard priority and also to vary the application of existing generic names without reference to the type species of the genera concerned. This extraordinary situation has led—and is still leading—to the utmost instability in the nomenclature of Orders and higher categories, authors, when bringing forward what they consider to be improved systems of classification, not hesitating to throw overboard Ordinal and Class names hallowed by long usage dating back in some cases even to Linnean days (as, for example, when a desirable revision of the fishes was accompanied by a wanton throwing away of the Class name “Pisces”). While the difficulties of importing order into this field are obviously very great, the need for so doing is equally obvious. Anyone attempting to obtain a general acquaintance with the relationships of the higher groupings in the Animal Kingdom is inevitably confronted with an extremely difficult

problem; any such student deserves every possible help and should be relieved of at least all those difficulties which are remediable. But in fact such a student is gravely hampered by the complete anarchy which exists in the terminology used for denoting the groupings which it is his task to study. Indeed, the utter disorder which reigns in this field of zoological nomenclature is much more than a serious handicap to the study of the structure of the Animal Kingdom; it is a grave reflection upon zoologists generally that they should have tolerated for so long a situation which is a reproach to the science which they follow.

4. General character of the nomenclatorial problem involved:

The nomenclatorial problems involved in the naming of Orders and higher taxonomic categories are essentially similar to those involved in the naming of families. In each case what is needed is a system which will provide a sufficient degree of stability for, and uniformity in, the names applied not to some entity possessing an objective existence of its own but to abstract concepts which for practical reasons it is convenient to recognise in the classification of the vast array of creatures which together constitute the Animal Kingdom. In approaching this problem, it will be useful therefore to do so by following paths parallel to those which it has been found necessary to tread when considering the question of the principles to be followed in the naming of families. We have to recognise however from the outset that the problem confronting us is much more difficult than that which arises in connection with family names, for defectives as are the provisions in the *Règles* relating to the naming of families, the fact that there are any rules on this subject and, in particular, that those rules are based upon the concept of a "type genus" has rescued family names from the abyss of confusion and inconsistencies into which the naming of the higher categories has been allowed to lapse. Moreover, as will be obvious, the problem involved in introducing some kind of order into the naming of Orders and higher categories has been gravely prejudiced by the fact that, whereas fifty years ago an effort was made (by the Berlin Congress of 1901) to regulate the naming of families, it is only now that, by direction of the Paris Congress of 1948, a corresponding effort is to be made in relation to the names of Orders and higher categories. Thus, in the present case, any scheme which may be devised will need to be weighted in favour of stability rather than uniformity, for an attempt to stress the latter at the expense of the former would inevitably lead to name-changing on a large scale which would be highly objectionable and would be unacceptable to the general body of zoologists. The most that can be hoped for at this late stage is therefore some system which will secure stability and uniformity in the names used for higher taxonomic groupings in particular sections of the Animal Kingdom, but which will not provide a uniform system of nomenclature applicable throughout the Animal Kingdom as a whole.

5. Content of an Order for nomenclatorial purposes: The first question which calls for attention in drawing up a plan for the regulation of the names of Orders is the means to be adopted for providing a fixed content for nomenclatorial purposes for each nominal Order dealt with. The problem here is exactly parallel to that which a hundred years or more ago zoologists had to face in order to provide a fixed content for each nominal genus. This

object was successfully achieved by the adoption of the type species concept, under which for nomenclatorial purposes one of the originally included species was fixed as the sole determining factor for the genus concerned; that species—and that species alone—belonged in all circumstances to the nominal genus in question; whether or not other species should also be referred to that genus was solely a matter of taxonomic judgment and one therefore which fell entirely outside the field of zoological nomenclature. At the present time nominal Orders are in exactly the same position as a nominal genus for which no species has been designated or selected as the type species; in each case the concept represented is indeterminate and, having no fixed foundation, is liable to be changed at any time in accordance with the shifting views of successive generations of taxonomists, there being no mechanism to ensure that at least some part of the group originally included in the nominal Order shall, in all circumstances, remain in that Order for nomenclatorial purposes. Quite clearly, no progress of any kind in the direction of securing stability in the names of Orders can be achieved until means are provided to overcome this fundamental defect. In other words, it is an essential preliminary that each nominal Order should be provided with a “type” which shall be irremovable from that Order and shall constitute the sole means by which that Order shall be identified. If in every Order the included genera were grouped into families, the natural course would be to provide that every nominal Order should have a “type family.” In many groups, however, there are well established Orders but taxonomic ideas in regard to the mutual relationships of the genera included in those Orders are not sufficiently understood for it to be possible as yet to subdivide those Orders into families, or at least there is not sufficient agreement among specialists to make it possible to regard as firmly established such families as have been recognised. In these circumstances there seem to me to be two possible ways of providing such an Order with the “type” which it must have if it is to represent an objectively determinate concept. First, it would be possible to provide (a) that every nominal Order shall have a type family or, in the default of families having been established in that Order, a type genus and (b) that, where a genus and not a family is selected to be the type of an Order that genus shall automatically become the type genus of the type family of that Order as soon as families are established within it. Second, it would be possible simply to provide (i) that every nominal Order must have a “type genus” and (ii) that the “type genus” of an Order shall also be the “type genus” of each successive nominotypical sub-unit (e.g. infra-Order, Sub-Order, etc.) into which the Order concerned may be divided. The question of the means to be adopted for providing nominal Orders and similar categories with “types” is one of exceptional difficulty. For reasons which will become apparent in due course, it will, I think, be convenient to defer until a later stage in the present paper the consideration of the rules to be adopted for the designation, indication or selection of “types” for nominal Orders and higher categories.

6. Terminations of Ordinal Names: The wide diversity of terminations currently in use for the names of Orders makes it quite clear that no uniform termination for Ordinal names throughout the Animal Kingdom can be established without inviting a widespread and most undesirable changing of

established names. It might however be possible to provide for uniformity within particular groups, where this was in accordance with the wishes of specialists in the groups concerned, for example, in the Class Aves where by general agreement the termination “-iformes” is adopted for Ordinal Names. If it were to be decided to provide for a limited measure of uniformity of this kind, it would be necessary to provide a standard by which to determine the area within the Animal Kingdom inside which any given uniform termination was to be used. This end could be attained in a number of different ways: For example, if it were decided to establish a uniform termination for Ordinal Names within a given Class, it would be possible to provide that the proposed uniform termination should be used for every Order regarded as belonging to the same Class as the Order which is the “type Order” of that Class. In many parts of the Animal Kingdom the ideas of systematists regarding the limits of Classes are, in the present state of knowledge, extremely fluid; it would be necessary therefore to consider what should be the position when an Order is removed on taxonomic grounds from the Class in which it has hitherto been placed. Should such an Order retain for its name the uniform termination which it had borne prior to its removal from the Class concerned or should it, on being removed from that Class be deprived of that termination for its name? This question will require careful consideration: the interests of stability would suggest that in such a case the name of the Order should remain unchanged; on the other hand, it might be felt that it would be misleading in such a case if an Order were to be permitted to retain, as the termination of its name, a termination prescribed for Orders belonging to a nominal Class to which the Order in question is no longer considered on taxonomic grounds to belong.

7. Relation of Ordinal Names to the names of other suprafamily taxonomic categories: In our consideration of the relation of the names of families to those of the subdivisions of families (i.e. subfamilies and tribes) (1952, *Bull. zool. Nomencl.* **7**: 85-86) we have seen that it is essential from a nomenclatorial point of view, to treat all these names as co-ordinate with one another, just as generic names and subgeneric names are already so treated. It is immediately evident that exactly similar considerations apply as between the names of Orders and the names of Sub-Orders and other minor divisions of Orders. It will be a matter for consideration whether the names of Orders should be treated as co-ordinate with those of Classes. The fluid state of taxonomic ideas in regard to many invertebrate groups suggests that this might be desirable, for, as systems of classification become more elaborated, there is a tendency to advance to the rank of Classes groups formerly regarded as constituting Orders; in consequence, extensive name-changing might be inevitable if the names of Orders and Classes were treated in entirely separate compartments. This subject is reverted to in paragraph 16 below.

8. Principles to be adopted in determining whether a given term was published as an Ordinal Name: It is probable that in the literature of the last hundred years there are few cases where it is doubtful, as regards any given term, whether or not it was published as an Ordinal Name. So far, therefore, as concerns names published in this period, there would from this point of view be no difficulty in determining whether or not the terms in question

should be accepted as having been published as the names of Orders or of nomenclatorially co-ordinate categories. When however we go back to the XVIIIth century and the first half of the XIXth century, the position is far otherwise, for many names now accepted as Ordinal Names were published during that period in circumstances which it would be very difficult to bring within any definition of what constitutes the publication of an Ordinal Name. It seems likely therefore that in this matter—as in many similar cases—it will be found convenient to adopt a twofold definition, the first, the more lenient, to apply to names published before a certain date, the second, more rigorous, to apply to names published after the date referred to above but prior to the date of the introduction of the new provisions. Finally, for names published after the introduction of the new scheme, it will certainly be essential to provide (on the analogy of Proviso (c) to Article 25 in relation to generic names) that it shall be a necessary condition for the availability of a new Ordinal Name that, at the time when it is first published, the type family (or, as suggested above, the type genus) of the Order so named shall be clearly designated or indicated.

9. Ordinal Names and the Law of Priority : Just as we have seen that it would be entirely impracticable to require that the names of all Orders should have a uniform termination (see paragraph 6 above), so also it seems to me that it would be out of the question to apply the principle of priority for the purpose of determining the relative status of all Ordinal Names, for many of the older and therefore best known Ordinal Names would fail to pass such a test ; in consequence, many such names would disappear under such a system, being replaced by names which, though technically older, have virtually never been used and are today entirely unknown to any but close students of the history of zoology. While the principle of priority would thus be entirely inappropriate for application to names published during (say) the first hundred years following the establishment of zoological nomenclature in 1758, it could probably be applied successfully—with occasional exceptions—to the literature of the last hundred years. As regards the future—that is, the period following the introduction into the *Règles* of provisions relating to the naming of Orders—the principle of priority would not only clearly be workable but would also be the most equitable system to adopt. Thus, as in other cases where in the past either new provisions have been added to the *Règles* or old provisions have been revised, we are faced here with a situation in which it seems likely that it will be necessary to apply different standards to old names from those to be applied to more recent names published before the introduction of the scheme and that altogether more rigorous provisions will be needed for names published after the date of the introduction of the scheme.

10. Emendation of Ordinal Names : It will be necessary for the scheme to contain provisions relating to the emendation of Ordinal Names, for there are many such names now in use, for which emendations have been published, of which some have been accepted, while others (equally justified on etymological and similar grounds) have been rejected. Similarly, the scheme will need to prescribe the extent (if any) to which Ordinal names published after the coming into operation of the proposed scheme are to be subject to emendation. The general principle which I have recommended should be adopted in relation to the emendation of generic names (and trivial names) (1952,

Bull. zool. Nomencl. **7**: 12-14), namely the need for restricting the scope within which emendations should be permissible, (a) because of the great decline among zoologists in knowledge of, and interest in, the Latin and Greek Languages, and (b) because of the much greater importance attached now than formerly to the avoidance of irritating and pointless changes in names, applies with equal force, as we have seen (1952, *Bull. zool. Nomencl.* **7**: 11-14) to family names. In this matter, as in others, there would be no advantage whatever in applying to the names of Orders principles different from those to be applied to family names. I accordingly recommend that the scheme relating to Ordinal and co-ordinate names should provide that the emendation of such names shall be subject to the same conditions and procedure as that (proposed to be) prescribed for family names (see 1952, *Bull. zool. Nomencl.* **7**: 67-70).

11. Question of the names to be given to the nominotypical sub-units of Orders and Higher Taxonomic Categories : Under the *Règles* as they exist today, the nominotypical sub-units of both nominal genera and nominal species—that is, the subgenus containing the type species of the genus in which that subgenus is comprised and the subspecies of a polytypic species on which the original description of the species itself was based—do not bear independent names of their own but have names which are tautonymous, in the first case, with the name of the genus concerned and, in the second case, with the trivial name of the species concerned. Although the *Règles* contain no provision on this subject in relation to the nominotypical subfamilies and the nominotypical tribes of families, the same principle is commonly accepted in relation to names of units belonging to these categories and it has been suggested in the present series of papers (1952, *Bull. zool. Nomencl.* **7**: 85-86) that valid force should be given to this practice. When however we come to consider the parallel problem presented by the names of Sub-Orders of Orders, we find an entirely different position, for here the normal, if not the universal, practice is for each Sub-Order to have a name of its own, quite independent of the name of the Order within which the Sub-Order is comprised. That this should be so is no matter for surprise, since up till now Orders have not possessed types (either type families or type genera) and in consequence there has never been till now such a concept as that of a nominotypical Sub-Order. In these circumstances, it is clear that the introduction of a rule that the name of the nominotypical Sub-Order of an Order should be tantonymous with, or even necessarily based upon the same word as the name of the Order concerned (being distinguished therefrom only by a difference in termination) would serve no useful purpose and, through the name-changing which it would involve, would indeed be open to strong objection. Similar considerations apply to the names of the nominotypical Sub-Classes of Classes and the nominotypical Sub-Phyla of Phyla.

12. Citation of the name of the author of, and the date of publication of, Ordinal Names : Until comparatively recent times, the names of Orders were normally cited without particulars of authorship and date of publication, but in recent years the tendency has been for authors to give these particulars—usually for the purpose of providing some indication of the grounds on which the authors concerned have adopted one name in preference

to some other name for the Order concerned. If the names of Orders are to be brought under regulation, this practice should be formally recognised by the *Règles* as being correct, for it will be essential that in general works covering a substantial area of the Animal Kingdom particulars should be given of the "types" (whether type families or type genera) of the Orders dealt with, just as today in all similar works dealing with nominal genera particulars are (or should be) given of the type species of the genera concerned.

13. Homonymy as between Ordinal Names : One of the most objectionable results of the present chaotic state of Ordinal nomenclature is the co-existence of homonymous Ordinal Names. A striking example is provided by the term "Decapoda" which is, and has long been, in use as the name of an extremely well-known Order in the Class Crustacea and also as the name of a very well-known Order in the Class Cephalopoda. While such a situation may not seriously disturb specialists whose interests are confined exclusively to one or other of the Orders concerned, it represents nevertheless a serious reflection upon the present system of nomenclature for the higher categories in the Animal Kingdom, being both utterly illogical and entirely indefensible; it constitutes a serious handicap to teachers of zoology and a totally unnecessary source of confusion for students. From every point of view, therefore, it must be an essential condition of any rationalisation of the nomenclature of Orders and higher groups that a stop should be put to homonymy as between Ordinal Names. On the other hand, a provision similar to that already laid down in relation to generic names and to the trivial names of species and subspecies would clearly not be appropriate in the case of Ordinal names, for there could be no assurance that, in the case of the Ordinal names concerned, a rule that the junior of any pair of homonyms must always be rejected in favour of the senior homonym would provide the desired result, for it might well be found that in some of the cases involved it is the junior homonym, rather than the senior homonym, which it is of outstanding importance should be preserved in the interests of stability as a whole. It appears to me, therefore, that in this matter the best course would be for the scheme to provide not a fixed rule but rather some flexible mechanism which will ensure that the solution adopted shall in each case be the one calculated to produce the highest degree of stability, while causing the least possible inconvenience to workers in whichever of the Orders concerned some change in the Ordinal name used has to be made in order to escape from the existing situation of homonymy between the Ordinal names in question. It is accordingly suggested that for the present purpose the scheme should provide (1) that, where a situation of homonymy is found to exist as between two Ordinal or other nomenclatorially co-ordinate names, each published prior to the introduction of the revised scheme, the question which of the names in question is to be rejected in favour of the other is to be referred to the International Commission on Zoological Nomenclature for decision, it being the duty of the Commission in any such case to give preference to the more widely known and generally used of the names concerned, but (2) that, where a situation of homonymy arises either (a) between two Ordinal or nomenclatorially co-ordinate names, of which one was published prior to, and the other subsequent to, the introduction of the revised scheme or (b) between any two such names, both of which were published after the

foregoing date, the later published of the two names concerned is to be rejected as a junior homonym of the earlier published name. It is further suggested that applications under (1) above should be subject to the same procedure as that which I have recommended should be adopted in the like case as respects family names, that is, that the Commission should be required, on receiving any such application, to give public notice of its receipt in like manner as though it were an application involving the possible use of its plenary powers.

14. Suggested insertion in the "Règles" of a provision for the purpose of determining whether any two Ordinal or other co-ordinate names consisting of very similar but not identical words are to be treated as homonyms of one another: In the rules relating to homonymy in Ordinal (and co-ordinate) names, as in the rules relating to homonymy in names belonging to any other category, it will be necessary to provide means for determining whether any two Ordinal or co-ordinate names consisting of very similar, but not identical, words are to be treated as being homonyms of one another. In this matter no difference of principle exists by which names belonging to the foregoing categories are distinguishable from the names of families. It is accordingly suggested, therefore, that the scheme relating to the naming of Orders and allied categories should contain a provision applying to such names the provisions in this matter (which I have recommended should be) applied to family names (see 1952, *Bull. zool. Nomencl.* **7** : 83-84).

15. Homonymy between Ordinal Names and Generic Names: The Thirteenth International Congress of Zoology (Paris, 1948) incorporated into the *Règles* a provision based upon the Commission's *Opinion* 102 that the Law of Homonymy does not apply as between the names of Orders and higher categories on the one hand and the names of genera on the other hand, adding however at the same time a *Recommandation* deprecating the selection as generic names or trivial names of words previously published as the names of taxonomic units belonging to Sub-Ordinal or higher categories (1950, *Bull. zool. Nomencl.* **4** : 164-165). It has however more recently been suggested that that words already published as the names of Orders or higher categories should not be regarded as available for use as generic names at least for genera in the Order concerned, because of the confusion which would inevitably arise if the same word were to be used to denote both a whole Order and also a single genus within that Order. A case in point has arisen lately in connection with the recently unearthed generic name *Xiphosura* Brünnich, 1771, the name of a nominal genus objectively identical with (because possessing the same type species as) the nominal genus *Limulus* Müller (O.F.), 1785; the genus *Xiphosura* Brünnich (= *Limulus* Müller) is referable to the Order Xiphosura (Class Merostomata), and very strong objection has been lodged by specialists to the co-existence of the term "Xiphosura" both as an Ordinal Name and as a generic name. Any provision dealing with this problem would need to be such that a new generic name could not invalidate an established Ordinal Name and also that a new Ordinal Name could not invalidate an established generic name.

16. Names of Classes and Phyla: Hitherto we have considered the question of introducing rules for governing the names of units belonging to categories above the family level mainly from the standpoint of the names of

Orders, but we have noted that for practical reasons it will be desirable that the names of Orders and Classes should be co-ordinate with one another. Broadly speaking, the considerations which apply to the names to be given to Orders apply also to the names to be given to Classes and Phyla and their respective sub-units. In particular, it will be essential that, like Orders, these higher categories should be provided with types, which presumably would normally be, in the first case, type Orders and, in the second case, type Classes, for, like a nominal Order, a nominal Class or a nominal Phylum remains indeterminate until it has been provided with a type, by means of which its content for nomenclatorial purposes can alone be defined. It would be a matter for consideration whether the names of Phyla should be made co-ordinate with those of Classes. The answer to be given to this question will naturally depend mainly upon the view taken as to whether or not it is desirable that, when a group not previously assigned to any given Phylum is on taxonomic grounds treated as itself constituting a Phylum separate from any hitherto recognised, the name of Class rank hitherto borne by the group concerned should be promoted (with its existing priority) to the rank of a Phylum name. In view of the growing practice by which such promotions are made, it seems desirable that the names of Classes and Phyla should be made co-ordinate with one another.

17. Co-existence of Ordinal and Class Names based upon the same word: There are numerous cases where Ordinal Names and Class (or Sub-Class) Names are based upon the same word, differing from one another only by some slight variation in the termination employed. Just as it has been represented (see paragraph 15 above) that serious and quite unnecessary confusion is liable to arise from the co-existence of Ordinal Names and Generic Names consisting of the same word, so also it has been strongly urged that unnecessary confusion is liable to arise where slight variants of the same word are used to denote Orders and Sub-Classes and Classes. The representations on this subject received from teachers of zoology and palaeontology will require to be given careful consideration when the plan for regulating the names of Orders and higher taxonomic categories comes to be drawn up. My own feeling is that on balance the disadvantages involved in a change of the present practice would outweigh the advantages. It will, no doubt, be agreed that, from the point of view of giving oral instruction to students, it may often be an inconvenience—and, in some cases, even confusing—that successive strata in the hierarchy of categories recognised in taxonomic zoology should bear names based upon the stem of the same word and should differ from one another only by some slight difference in the termination employed. On the other hand, it seems likely that the number of names which would need to be altered if a change such as that discussed above were to be made would be considerable—in which case the proposal would offend against the canon that nothing should be inserted in the *Règles* that is calculated to lead to unnecessary name-changing. Moreover, the principle of using the same word as the base of names belonging to successive taxonomic categories is already well-established in the case of the names of families, subfamilies and tribes and their type genera. This practice does not give rise to confusion for the categories of names concerned, and it is not obvious why it should give rise to such results if it were to be applied—as it is, in fact, now applied—to the names of Orders and higher categories.

18. Proposed establishment of an "Official List of the Names of Orders and Higher Taxonomic Categories in Zoology": For reasons similar to those already explained in connection with the suggested establishment of an *Official List of Family Names in Zoology* (see 1952, *Bull. zool. Nomencl.* **7** : 90-91), it will clearly be necessary to include in the scheme for regulating the names to be given to Orders and higher taxonomic categories a provision establishing an *Official List of the Names of Orders and Higher Taxonomic Categories in Zoology*. The scope of this *Official List* and the duties of the Commission in relation to it would be similar to those prescribed in relation to the *Official Lists* already in existence. Thus, every Ordinal or other name, if the oldest available for the Order or other category concerned, regarding which the Commission took a decision would automatically be placed upon the *Official List*, as also would be the name of any Order (or other category) the type genus of which was placed on the *Official List of Generic Names in Zoology*. As in the case of the other *Official Lists*, there would need to be a provision, under which, at the discretion of the Commission, a second Ordinal (or equivalent) name could be placed on the *Official List*, with a note that it was so placed for use by those workers who considered that its "type" was not referable to the same Order as the "type" of the Order having the older name which was also on the *Official List*. Names placed on this *Official List* would be given the same relative status as names placed on the other *Official Lists*. The entries to be made on the *Official List* now proposed would follow generally the pattern set by the existing *Lists* and would include the bibliographical reference to the name concerned, the name of the "type" (whatever category may be accepted for this purpose), with a reference to the place where the name of that "type" (e.g., whether a family or a genus) was first published and information in a prescribed form regarding the manner in which the "type" acquired that position, whether by original designation, by indication, or by subsequent selection (in this latter case the necessary bibliographical reference being added). It is suggested further that, as in the case of the proposed *Official List of Family Names*, any given Ordinal or co-ordinate name should be entered on the *Official List* in precisely the form in which it was originally published, irrespective of whether or not the name in question is currently used as a name for a unit belonging to the category for which it was originally published or for some higher or lower category within the group of categories, the names of which would be co-ordinate with one another under the scheme contemplated. The duties of the Commission in relation to the proposed *Official List* would be the same as those for the existing *Official Lists*, that is, that it would be its duty to maintain and develop it by every means in its power. Concurrently with the establishment of the proposed *Official List* there would, again following the precedent set by the Congress in other cases, need to be established an *Official Index of Rejected and Invalid Names of Orders and Higher Taxonomic Categories*, on which would be placed all Ordinal and co-ordinate names rejected by the Commission or found by it to be invalid. The *Official List* and the *Official Index* so established would, like those already in existence, be embodied in Schedules annexed to the *Règles*. It will be seen from the foregoing summary that the provisions suggested for the proposed *Official List* and for the corresponding *Official Index* conform very closely to those laid down for the *Official Lists* and *Official Indexes*

already established and are virtually identical with those suggested for the *Official List* and *Official Index*, the establishment of which has been recommended as part of the plan for placing the naming of families and subordinate suprageneric units on a satisfactory footing (see 1952, *Bull. zool. Nomencl.* 7: 90-93).

19. Alternative approaches to the problem of regulating the naming of Orders (including subordinate suprageneric categories), Classes and Phyla: The foregoing survey of the problems involved in devising rules for the naming of Orders (including Sub-Orders and other subordinate suprageneric categories), Classes and Phyla shows that it would be perfectly practicable to lay down simple and easily operated rules in respect of most of the matters which would require to be dealt with. There would, however, be serious, though not insuperable, difficulty in devising such rules in relation to two of the problems involved, if extensive name-changing of the most objectionable character was to be avoided. The two problems are: (1) the determination, in respect of names published prior to about the middle of the nineteenth century, of the dates to be assigned to names currently adopted as Ordinal (or co-ordinate) names; (2) the method to be established for determining the "types" of taxonomic units established prior to the introduction of the proposed scheme. In these circumstances, there are, it is suggested, two alternative approaches to this problem, either of which would be practicable. Under *Alternative No. 1*, definite rules would be laid down in respect of all the problems involved; under this alternative the two problems of special difficulty would be dealt with by provisions which applied the Law of Priority to Ordinal names and to co-ordinate names of other categories and which prescribed that the "type" of any of a taxonomic unit belonging to any of these categories would be that one of the originally included units which was either so designated or indicated by the original author or was the first later to be selected as such. These two provisions would, under this Alternative, be subject, in each case, to a proviso that, where, in the opinion of specialists, the application of either or both of these provisions would lead to serious consequences through the changing of names involved, it would be open to those specialists to make application to the Commission that the normal rules be varied in the case of the name in question and it would thereupon become the duty of the Commission to decide what name should be used for the taxonomic unit concerned; it is suggested that it should be an instruction to the Commission in deciding such applications, to guide itself by the need for maintaining uniformity and promoting stability in nomenclature. It is further suggested that in such cases the Commission should be bound to give public notice of applications received in the same way as it has been suggested (in paragraph 13 above) that it should be required to do when considering applications relating to homonymy in Ordinal names and names of higher rank. Under *Alternative No. 2* the scheme would contain the same provisions as under *Alternative No. 1*, except in regard to the application of the Law of Priority and the method to be followed in determining the "types" of taxonomic units belonging to the categories with which we are here concerned. Under *Alternative No. 2* these matters would not be subject to hard and fast rules; there would, in place of such rules, be a provision in the scheme that

authorised the Commission, on the application of specialists (a) to determine the names to be accepted as valid for particular Orders, Classes and Phyla by authors who recognised those Orders, Classes and Phyla as taxonomically required, and (b) to prescribe the "type" to be accepted for the purpose of providing the units so named with an objective—and, therefore, determinate—concept. My own feeling is that of these *Alternatives*, No. 2 is greatly to be preferred to No. 1, for under it there would be no risk of undesirable disturbances in existing practice arising from the application of the rules (as might easily happen under *Alternative No. 1*), while at the same time provision would be made for the orderly stabilisation of Ordinal names and names of higher rank in those groups where the workers concerned were especially conscious of the need for an improved system for the naming of Orders and higher taxonomic categories and were anxious to secure stability for the names of units belonging to such categories in their own groups.

20. Appeal to zoologists for advice: Having now completed a survey of the problems which will have to be faced in devising any scheme for regulating the naming of taxonomic units belonging to the category Order and higher categories and having offered suggestions as to various ways by which some of these problems could be met, I commend the whole subject to zoologists for consideration and advice. It is my hope that Nomenclature Committees of Natural History Museums and similar scientific institutions will take this problem into consideration and will furnish statements of the views of their members on the various issues involved. Similar statements from individual specialists will also be extremely welcome. The subject affects workers in every branch of zoology and is of equal interest to neontologists and palaeontologists. Under the instructions given by the Paris Congress a Report on this subject, with definite recommendations must be prepared for consideration by the Copenhagen Congress in 1953, and it is particularly hoped therefore that there will be a very full and detailed response to the present appeal for advice, so that the Report which it will be my duty to prepare may be based upon whatever is found to be the solution most generally desired. If that Report is to be properly considered before the Copenhagen Congress, it ought to be published in the *Bulletin of Zoological Nomenclature* well before that Congress opens; for this purpose the Report itself ought to be completed by the autumn of 1952. It is accordingly particularly hoped that committees and individual specialists will formulate their views as quickly as is possible, so that these may reach me, as Secretary to the Commission (28, Park Village East, Regent's Park, London, N.W.1, England) not later than the end of July, 1952. Finally it is particularly asked that comments should be type-written, double-spaced on one side of the page only and should be furnished in duplicate. All signatures should be clearly typed as well as given in the writer's usual script. Every statement should be clearly marked with the Commission's Reference Number, Z.N.(S.)360.

**ON THE QUESTION OF THE SPECIES TO BE ACCEPTED AS
THE TYPE SPECIES OF A NOMINAL GENUS, THE NAME OF
WHICH WAS PUBLISHED PRIOR TO 1ST JANUARY 1931
IN THE SYNONYMY OF A PREVIOUSLY ESTABLISHED
NOMINAL GENUS : AN APPEAL TO ZOOLOGISTS FOR
ADVICE**

By FRANCIS HEMMING, C.M.G., C.B.E.

(Secretary to the International Commission on Zoological Nomenclature)

(Commission's reference Z.N.(S.)387)

(For the decision by the Thirteenth International Congress of Zoology
that an investigation should be made in regard to this subject, see 1950,
Bull. zool. Nomencl. 4 : 352)

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**(a) Question whether a generic name published, prior to
1st January 1931, in a generic synonymy should be granted any
status in zoological nomenclature in virtue of being so published**

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Preliminary Considerations

1. Introductory: The present paper is concerned with the relatively narrow problem of the species to be accepted as the type species of a nominal genus established prior to 1st January, 1931 (i.e., prior to the coming into operation of Proviso (c) to Article 25), when the name of the genus in question was published in the synonymy of some previously established nominal genus. The present is the fourth of the seven problems relating to the *Règles* which the Thirteenth International Congress of Zoology at its meeting held in Paris in 1948 considered required attention but which, in its opinion, needed further study before decisions were taken thereon; that Congress accordingly requested me, as Secretary to the International Commission on Zoological Nomenclature, to confer on this subject with interested specialists with a view to the preparation of a comprehensive Report, with recommendations, for consideration by the Fourteenth International Congress of Zoology when it meets at Copenhagen in 1953.

2. In the interval which has elapsed since the Paris Congress, I have taken every opportunity which has offered to obtain the views of specialists on this subject. In this process a suggestion has been made which, if adopted, would render the further pursuit of the present investigation unnecessary by having eliminated altogether the problem which the Paris Congress charged me to consider. The suggestion referred to above is described briefly in paragraph 5 below. It was originally put to me in a paper enclosed with a letter dated 30th August, 1950, by Dr. Ernst Mayr (American Museum of Natural History, New York), which dealt not only with the present subject but also, and perhaps principally, with the parallel problem which arises when a new specific trivial name is found to have been first published on a date prior to 1st January, 1931, in the synonymy of the names applied to a previously established nominal species. On receipt of Dr. Mayr's communication, I prepared a short summary of the principal points which it appeared to me to raise and, through the kindness of the editors concerned, that summary was published shortly afterwards in the *Geological Magazine* and in the *Journal of Paleontology*. The publication of the foregoing summary has elicited a number of comments, almost all of which are directed only to that part of Dr. Mayr's communication which is concerned with the trivial names of species. In February, 1951, Dr. Mayr suggested that his paper (which in the meantime he had revised in certain respects) should be published in the *Bulletin of Zoological Nomenclature*. It has not yet been possible to comply with this request owing to the exceptionally large amount of matter which was then in the hands of the printer; that paper is, however, now in the hands of the printer and will shortly be published in Volume 6 of the *Bulletin of Zoological Nomenclature*. In so far as the publication of Dr. Mayr's paper elicits comments bearing upon the limited subject with which the present investigation is concerned, particulars of those comments will be included in the Report to be made at the conclusion of the present investigation.

3. I am of the opinion that the stage has now been reached at which a general consultation with specialists is desirable, in order to elicit as wide as possible an expression of opinion from interested specialists as to the action

which it is desirable should be taken in this matter by the Copenhagen Congress in 1953. It is for this purpose that I have prepared the present paper in which I have set out the issues involved in the relatively simple problem with which the present investigation is concerned.

4. Action taken by the Thirteenth International Congress of Zoology, Paris, 1948: In considering the action taken in the present matter by the Thirteenth International Congress of Zoology at its meeting held in Paris in 1948, it is necessary to appreciate that that action was taken in two stages, of which the second was no more than consequential upon the first. (1) At its Sixth Meeting during its Paris Session the International Commission on Zoological Nomenclature considered the question of the incorporation into the *Règles* of the decision which it had taken forty-one years earlier when it adopted its *Opinion* 4. As regards this, the Commission recommended that words should be inserted in the *Règles* to make it clear "that a manuscript name acquires status in zoological nomenclature only when it is validly published in conditions which satisfy the requirements of the provisos to Article 25, and that the status of a manuscript name so published is not affected by the question whether the author by whom it is published accepts it as a valid name or sinks it as a synonym" (1950, *Bull. zool. Nomencl.* **4** : 145-146). (2) At the Twelfth Meeting of its Paris Session the Commission had under express consideration the question of the application, to generic names published in generic synonymies, of the provisions of Article 30; as regards this the Commission agreed to recommend "that the Secretary to the Commission should be invited to make a thorough study, in conjunction with interested specialists, of the problems relating to the determination of the type species of a genus, the name of which was first published in the synonymy of some other genus, and to submit a comprehensive Report thereon, with recommendations, for consideration by the Commission at their meeting to be held during the next (xivth) meeting of the Congress, with a view to the submission by the Commission to the Congress of recommendations for the insertion in the *Règles* of appropriate provisions dealing with the above matter" (1950, *Bull. zool. Nomencl.* **4** : 351-352). These recommendations were subsequently approved with other recommendations by the Section on Nomenclature (1950, *Bull. zool. Nomencl.* **5** : 67-76, 103) and by the Congress itself at its final plenary session (1950, *ibid.* **5** : 131).

5. The proposal submitted by Dr. Ernst Mayr in February, 1951: The main argument advanced by Dr. Mayr in the application which he submitted in February, 1951, was that, in formulating its recommendation to the Paris Congress for the incorporation in the *Règles* of the decision taken in the forty-one-year-old *Opinion* 4, the Commission had misunderstood the purport of that *Opinion*. In Dr. Mayr's view, the Commission in that *Opinion* did not rule that a manuscript name published in a synonymy thereby acquired status in zoological nomenclature; on the contrary, a name so published was a *nomen nudum*; it was only when a later author published a manuscript name "with the standard provisions of Article 25, namely, an adequate description, an illustration or a bibliographic reference to a previously published description or illustration" that, in Dr. Mayr's view, such a name became subject to the provisions of *Opinion* 4. Dr. Mayr concluded his paper by a

recommendation that there should be an immediate repeal of the ruling (attributed by Dr. Mayr to *Opinion* 78, where, however, this subject is dealt with only in the "Discussion" and not in the "Summary") "which interprets the (erroneous or not) listing in synonymies as a valid indication in the sense of Article 25. Manuscript names should be added to the category of names (such as pre-Linnean names) that have no nomenclatorial rights. No exception should be granted to their status, not even quickening in synonymy." Although all the examples cited in Dr. Mayr's paper relate to the trivial names of species, his actual proposal is quite general and (as he has informed me) applies just as much to generic names published in generic synonymies as to trivial names published in specific synonymies.

6. Procedure proposed for the examination of the problems submitted: There is a danger of confusion arising in connection with the consideration of the problems discussed in the foregoing paragraphs, unless special pains are taken to prevent this from happening. For on the one hand there is the decision by the Congress that I am to prepare, in consultation with specialists, a Report on the question of the species to be accepted as the type species of a nominal genus, the name of which is first published in a generic synonymy, while on the other hand we have Dr. Mayr's application which, though primarily concerned with specific trivial names, is so drafted as to cover also generic names published in generic synonymies and which, if accepted, would automatically eliminate the problem on which the Congress has instructed me to furnish a Report. In the circumstances the most convenient course—and indeed, in my view, the only practicable course—will be the following:—

- (1) At the present preliminary stage consideration should be given to the problem of generic names published in generic synonymies separately from the problem of trivial names published in specific synonymies. Under the first head I should propose to include in the Report which I have been charged to prepare not only the narrow question of how to determine the type species of a nominal genus, the name of which was first published in the foregoing manner (the question expressly referred to me by the Paris Congress) but also the wider question whether such generic names should be accepted at all (this forming part of Dr. Mayr's application). Under the second of the proposed heads, consideration would be given to the question whether a trivial name published in a specific synonymy should be accepted as possessing any status in zoological nomenclature (this being the remaining and the principal part of Dr. Mayr's application).
- (2) For the foregoing purpose, the present request for the views of specialists is confined to the problems raised by generic names published in generic synonymies; as regards the second part of the problem (namely the position of trivial names published in specific synonymies), Dr. Mayr's paper, which is being published immediately in the next available Part of Volume 6 of the *Bulletin of Zoological Nomenclature*, will provide the necessary opportunity for securing the views of interested specialists.

- (3) On receipt of comments on both of the foregoing problems, those problems should, I suggest, be considered together, if the comments received suggest that it is the general desire of zoologists that these two questions should be treated as forming part of a single problem.

(a) Question whether a generic name published, prior to 1st January, 1931, in a generic synonymy should be granted any status in zoological nomenclature in virtue of being so published

7. View taken by the International Congress of Zoology, Paris, 1948 :

As has been explained in paragraph 4 of the present note, both the International Commission on Zoological Nomenclature and the Thirtieth International Congress of Zoology at their meetings held in Paris in 1948 considered the position of generic names published prior to 1st January, 1931, in generic synonymies and came to the conclusion that such names were available under the *Règles* and that the only problem which called for consideration was the species to be accepted as the type species of such genera. No zoologists, either at the public meetings of the Commission at which this matter was considered or in the Section on Nomenclature suggested that it was undesirable that generic names published in the foregoing manner should be held to be available for nomenclatorial purposes. The whole discussion centred around the application to be given to generic names published in this way, that is, what species should be accepted as the type species of a nominal genus, the name of which was first published in the foregoing manner. It was for this reason that the Report which I was then asked to prepare, in consultation with specialists, was concerned only with this latter question.

8. Dr. Ernst Mayr's application : The proposal since submitted by Dr. Ernst Mayr (paragraph 5 above) is concerned mainly with the question whether any status should be granted to manuscript names, whether generic or trivial, when published respectively in generic or specific synonymies. As already explained, that application, so far as the examples given illustrate it, is concerned entirely with the trivial names of species, but the general wording employed makes it applicable also to manuscript generic names, when published in generic synonymies. The problem which arises in connection with these two classes of name is identical in principle and it is certainly entirely logical that the two problems should be considered together, though naturally this does not exclude the possibility that there may be practical reasons which may make it desirable to treat these two classes of names in different ways.

9. So far as concerns generic names published, prior to 1st January, 1931, in generic synonymies, Dr. Mayr's proposal is essentially that the Commission at its next meeting should reverse the advice which it gave to the Paris Congress when it recommended the incorporation in the *Règles* of the ruling set out in *Opinion 4*, as then interpreted by itself. For under his proposal, a generic name which when first published, was synonymised with some other generic name, would acquire thereby no status in zoological nomenclature, except (as Dr.

Mayr explained when he later visited me in London) when an author "A" published (1) a manuscript name proposed by some author "B", at the same time either quoting author "B's" manuscript diagnosis or indicating the species included by that author in his manuscript "genus", and (2) thereupon synonymised the nominal genus bearing the hitherto manuscript name with some other nominal genus having an older and available name. In my experience this is a very unusual set of circumstances, but Dr. Mayr informs me (*in litt.*, 8th February, 1952) that in groups with which he is familiar it has happened not infrequently that an author has published a deceased author's manuscripts and, in doing so, has commented upon the validity of the names which he so published.

10. Questions arising out of Dr. Ernst Mayr's application on which the views of specialists are desired: The following are the questions arising out of Dr. Mayr's application on which the advice of specialists is invited: (1) In the group in which you work is it the practice to accept as nomenclatorially available a manuscript generic name or a generic name which previously had existed only as a published *nomen nudum*, when and as from the date on which that generic name was published in the synonymy of a previously published name? Please state to which group of the Animal Kingdom the answer to the foregoing answer applies. (2) If the answer to the above question is "Yes", are you in favour of its being made clear in the *Règles* (as was done by the Paris Congress) that a generic name so published before 1st January, 1931, is to be accepted as having been validly published? (3) If the answer to Question (1) is "No", are you in favour of a reversal of the Paris decision, i.e. are you in favour of its being made clear in the *Règles* that a generic name published in the foregoing manner does not thereby acquire any standing in zoological nomenclature? If the answer to the above question is that you do favour a modification of the Paris decision in the foregoing manner, would your view be altered if it were to be found that in groups other than your own such a decision would cause instability through the name-changing which it would involve?

(b) Question of the species to be accepted as the type species of a nominal genus, the name of which was published prior to 1st January, 1931, in the synonymy of a previously established nominal genus

11. The nature of the problem arising in connection with the species to be accepted as the type species of a nominal genus, when, on being first published, that name was published in the synonymy of a previously published generic name: In the preceding section, we have drawn attention to Dr. Ernst Mayr's proposal that a manuscript generic name should not acquire any status in zoological nomenclature in virtue of being published in the synonymy of some other generic name. If the Copenhagen Congress, on the recommendation of the Commission, were to decide in favour of the proposal submitted by Dr. Mayr, the question of the type species of a nominal genus, the name of which was first published in this way (the question on which the

Paris Congress in 1948 invited me to prepare a Report for submission to the next Congress) would fall to the ground, for there would be no point in considering what should be accepted as the type species of a nominal genus, the name of which was invalid. If however the Copenhagen Congress were to take the opposite view, the question of the species to be accepted as the type species of a nominal genus, the name of which had, prior to 1st January, 1931, been published in this admittedly unsatisfactory way would call for immediate decision. The present section is accordingly devoted to this latter problem, without prejudice to the answer to be given to the previous question.

12. A hypothetical example of the situation on which a ruling is required: The problem which it is now necessary to consider may most easily be brought out by a hypothetical example. Let us suppose that in 1758 Linnaeus established a nominal genus *X-us* with no designated or indicated type species but with three validly established nominal species, namely *X-us a-us*, *X-us b-us*, and *X-us c-us*. Let us further suppose that in 1810 Latreille selected *X-us b-us* as the type species of the genus *X-us* Linnaeus, 1758. Finally, let us suppose that in 1830 some author "M" published a paper in which (i) he used the generic name *X-us* Linnaeus, 1758, (ii) cited the manuscript name *Y-us* Smith in the synonymy of *X-us* Linnaeus, and (iii) placed in the nominal genus *X-us* Linnaeus five nominal species, namely (a) two of the original Linnean species (*X-us a-us* and *X-us c-us*) and three new species (*X-us m-us*, *X-us n-us*, and *X-us o-us*).

13. The alternative solutions possible: The question to be settled is (1) whether the type species of the nominal genus *Y-us* "M", 1830, is automatically in all circumstances the same species as that which is the type species of *X-us* Linnaeus or (2) whether all the nominal species cited by the author "M" in 1830 as belonging to the genus *X-us* Linnaeus, with which the new nominal genus *Y-us* "M" was then identified (the name *Y-us* "M" being then treated as a synonym of *X-us* Linnaeus) are to be regarded as eligible for selection as the type species of the nominal genus *Y-us* "M", 1830. Turning back to the hypothetical example given above, we find that, if the foregoing question is answered as in (1) above (i.e. if the type species of *Y-us* "M" 1830 is automatically the same species as that of *X-us* Linnaeus, 1758), the type species of *Y-us* "M" is automatically the species *X-us b-us* Linnaeus, 1758, that species having already been selected (by Latreille in 1810) as the type species of *X-us* Linnaeus, 1758. In this case the type species of *Y-us* "M", 1830, would, it will be noted, be a species not cited by the author "M" when in 1830 he first published the generic name *Y-us* (in the synonymy of the genus *X-us* Linnaeus). If on the other hand the question with which we are concerned were to be answered in the sense of (2) above (i.e. if, notwithstanding the manner in which the generic name *Y-us* was published by the author "M", the nominal genus *Y-us* "M" so published represents a nomenclatorial entity entirely distinct from that represented by the nominal genus *Y-us*—Linnaeus), the fact that (in our hypothetical example) Latreille had already in 1810 selected the species *X-us b-us* to be the type species of the genus *X-us* Linnaeus would not in any way affect the question of the type species of the nominal genus *Y-us* "M", 1830; in that case the

position would be that the generic name *Y-us* "M" would be a name published (a) with an "indication" (because the trivial names of duly published nominal species were published in connection with the name *Y-us* "M"); (b) without a designated or indicated type species. Accordingly, any one of the five species cited by the author "M" as belonging to the genus *X-us* Linnaeus—and therefore, also to the genus *Y-us* "M"—would be eligible for selection by any later author to be the type species of the nominal genus *Y-us* "M", 1830. (It will be appreciated that the foregoing hypothetical example has been drawn up on the basis of the assumption adopted by the Paris Congress that the publication by "M" in 1830 of the (at that time) manuscript name "*Y-us* Smith" in the synonymy of "*X-us*" Linnaeus, 1758, conferred availability upon the name "*Y-us*" as from Smith, 1830. Under the proposal submitted by Dr. Mayr (paragraph 11 above) the name "*Y-us*" would acquire no availability from being published in the foregoing manner by Smith in 1830. The manuscript name "*Y-us* Smith" would not, under Dr. Mayr's proposal acquire any availability until such later time (if any) as Smith (or one of his collaborators) published that generic name in conditions which satisfied the requirements of Article 25. The type species of "*Y-us* Smith" as ultimately so published would be whatever nominal species Smith (or his collaborator by whom the (till then) manuscript name "*Y-us* Smith" was so published) might then either "designate" or "indicate" or, if no such species was then either designated or indicated, whichever of the species included by Smith (or his collaborators) was first later selected to be the type species. It will be seen therefore that, under Dr. Mayr's proposal, the action taken (in the hypothetical example given in the present paragraph) by Smith in 1830 would have no influence at all on the question of the species to be accepted as the type species of "*Y-us* Smith", when at some later date that manuscript name was published by Smith (or one of his collaborators).)

14. Need for information regarding current practice by specialists in different parts of the Animal Kingdom: In cases of this kind, where the *Règles* fail to give clear guidance as to the action which should be taken, it almost invariably happens that specialists in different groups or even in the same group have adopted different procedures. Accordingly, the first step in such a case is to ascertain what is the practice that has actually been followed by specialists in different parts of the Animal Kingdom, in order thereby to find out what is the majority practice. Only by this means is it possible to reach an informed opinion as to which of the possible courses open to the Congress to take would be most in harmony with the general wishes of specialists and the course best calculated to promote nomenclatorial stability and to avoid confusing and unnecessary name-changing.

15. Probable need for a saving clause to prevent the interpretation now to be given from causing confusion and objectionable name-changing in particular cases: When in Paris in 1948 the International Congress of Zoology either introduced new provisions or gave rulings on questions regarding which the meaning of the *Règles* had previously been obscure or subject to debate, it adopted, so far as possible, the principle that the new provision or, as the case might be, the new interpretation should not

be allowed to give rise to confusion and objectionable name-changing in those cases where the current practice of specialists had been the minority practice then ruled to be incorrect. For this purpose the Congress normally agreed to insert a provision making it the duty of the International Commission on Zoological Nomenclature to use its plenary powers for the purpose of preventing disturbance of current nomenclatorial practice in such cases. It will, no doubt, be generally agreed that a similar provision will be desirable in the present instance, if, as must be expected, it is found that there is no uniformity among specialists in dealing with cases of the kind here under consideration.

16. Questions on which the advice of specialists is now sought : The problems discussed in the present Section (Section (b)) arise, as has already been explained (paragraph 2), only if the answer " Yes " is given to the first of the questions asked at the end of Section (a) (paragraph 10). The following questions, on which advice is now sought, are therefore addressed only to those specialists who give an affirmative answer to the question referred to above : (1) In the case of a nominal genus, the name of which was originally published in a generic synonymy, do you, in your own group, (a) treat, as the type species of the genus concerned, the species (whatever it may be) which is the type species of the nominal genus, with the name of which the generic name under consideration was synonymised at the time when it was first published, or (b) do you regard, as eligible for selection as the type species of such a genus, all the species cited on the occasion when the generic name was first published in the synonymy of another generic name ? (2) Have you any knowledge of the practice in this matter followed in allied or other groups ? If so, please give particulars. (3) Which of the possible methods of dealing with this problem do you favour as being the method best calculated to cause the minimum degree of disturbance in existing nomenclatorial practice ?

**THE APPLICATION TO BE GIVEN TO A TRIVIAL NAME WHICH, WHEN FIRST PUBLISHED, WAS BOTH APPLIED TO A PARTICULAR SPECIES OR TO PARTICULAR SPECIMENS AND ALSO STATED TO BE A SUBSTITUTE NAME FOR SOME PREVIOUSLY PUBLISHED TRIVIAL NAME OR WAS CLEARLY IMPLIED TO BE SUCH A SUBSTITUTE:
AN APPEAL TO ZOOLOGISTS FOR ADVICE**

By FRANCIS HEMMING, C.M.G., C.B.E.

(Secretary to the International Commission on Zoological Nomenclature)

(Commission's reference Z.N.(S.)361)

(For the decision by the Thirteenth International Congress of Zoology that an investigation should be made in regard to this subject, see 1950, *Bull. zool. Nomencl.* **4** : 502)

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Preliminary Considerations

1. Introductory: The present paper is concerned with the application to be given to a trivial name, when, on being first published, that name (i) is applied to a particular species or to particular specimens and (ii) is stated also to be a substitute name for some previously published trivial name or is clearly implied to be such a substitute. The present is the fifth of the seven problems relating to the *Règles* which the Thirteenth International Congress of Zoology at its meeting held in Paris in 1948 considered required attention but which, in its opinion, needed further study before decisions were taken thereon; that Congress accordingly requested me, as Secretary to the International Commission on Zoological Nomenclature, to confer on this subject with interested specialists, with a view to the preparation of a comprehensive Report, with recommendations, for consideration by the Fourteenth International Congress of Zoology when it meets at Copenhagen in 1953.

2. The problem with which the present investigation is concerned is a rare one—in my own reading I have only once encountered a case of this kind. This is fortunate, in that it makes it easier both to lay down a logically based rule of general application, while restricting within a very narrow compass the number of individual cases where the application of such a rule would lead to an undesirable disturbance of nomenclatorial practice. Our aim must therefore be to elicit from specialists such examples as they may be able to provide from their own experience and thus to determine the way in which this problem has been most generally handled, when it has arisen. The fact that this problem is one of rare occurrence makes it impossible to achieve any effective progress, except by means of a general consultation. It is for the purpose of initiating such a consultation that I have prepared the present paper, in which I have taken as illustrations of various aspects of this problem the two cases which have been submitted to the International Commission by individual specialists, the preliminary consideration of which led to the decision that the present investigation should be undertaken. The first of these applications (Z.N.(S.)179) was received from Dr. W. J. Arkell, F.R.S. (then of the University Museum, Oxford, now of the Sedgwick Museum, Cambridge), and was concerned with the present problem, as it arises in connection with certain names given to ammonites. The second of these applications (which, by a curious coincidence, was received on the same day as Dr. Arkell's application) is an application (Z.N.(S.)180) submitted by Dr. H. E. Hinton (then of the British Museum (Natural History), London, now of the University of Bristol) and was concerned with a name given to a beetle. The problem with which we are concerned was raised in the simplest and most direct form in the case submitted by Dr. Hinton, while the case submitted by Dr. Arkell was complicated by certain special features. For the sake of simplicity in the presentation of the present problem, I have thought it convenient to describe first the case submitted by Dr. Hinton, and a similar case submitted by Dr. Arkell, before dealing with the more complicated case set out in the second part of the application submitted by Dr. Arkell.

3. I hope very much that Nomenclature Committees of Natural History Museums and similar scientific institutions will be good enough to furnish

particulars of cases in which the problem with which the present paper is concerned may have been met with by their members in the course of their work, together with statements setting out the views of their members as to the best way of dealing with this subject. It is very much hoped also that individual specialists who have encountered the present problem will be good enough to furnish particulars of the cases concerned and will state how in those cases the problem involved has been dealt with by specialists in the group concerned.

4. I am most anxious that the Reports on the problems specifically referred to me by the Paris Congress should be completed in sufficient time to enable them to be published in the *Bulletin of Zoological Nomenclature* well before the meeting of the Copenhagen Congress in 1953. It will be a great help from this point of view if Nomenclature Committees and individual specialists responding to the present appeal for advice will be good enough to furnish their comments on the present problem not later than 31st July, 1952.

5. For the reasons explained in the preliminary note to the present series of papers, the work of the Secretariat of the Commission (which possesses no whole-time clerical and typing staff) will be greatly assisted if communications in regard to the present case are prepared in typescript, on one side of the page only, double-spaced and with wide margins and if they are furnished in duplicate.

6. All communications in response to the present appeal should be clearly marked with the Commission's Reference Number Z.N.(S.)361, and should be addressed to myself, as Secretary to the Commission (address: 28 Park Village East, Regent's Park, London, N.W.1, England).

(a) Case where a trivial name, when first published, is both directly applied to a given species or given specimens and is expressly stated also to be a substitute name for a previously published name or for some incorrect use of such a name

7. The case of the name "*Ptinus tectus*" Boieldieu, 1856, raised by Dr. H. E. Hinton: The problem which arises when a specific name is published simultaneously as a new name for a given species or for given specimens and also as a substitute name for some other specific trivial name previously published for some nominal species may be illustrated by the particular example submitted to the International Commission on Zoological Nomenclature by Dr. H. E. Hinton (Commission File Z.N.(S.)180), which was concerned with the application of the trivial name *tectus* Boieldieu, 1856, as published in the binominal combination *Ptinus tectus* (Class Insecta, Order Coleoptera). Boieldieu applied this name to a Tasmanian insect, which he explained that he regarded as identical with a species already named *Ptinus pilosus* White, [1846]; it was only because, so he made clear, White's name was a junior homonym of the name *Ptinus pilosus* Müller, 1821, that he did not apply that name to the Tasmanian insect with which he was concerned and felt bound to provide a new name (*Ptinus tectus*) for White's *Ptinus pilosus*. Dr. Hinton went on to explain that subsequent investigation had shown that the Tasmanian

insect to which Boieldieu applied his new name *Ptinus tectus* was not only not conspecific with *Ptinus pilosus* White, but actually belonged to an entirely different group, Boieldieu's Tasmanian insect being a true Ptinid, while White's *pilosus* was an Anobiid. The question submitted by Dr. Hinton was whether the trivial name *tectus* Boieldieu, 1856, should be held to apply (1) to the Tasmanian Ptinid described by Boieldieu under that name or (2) to the Anobiid species to which White had (in 1846) applied the trivial name *pilosus*, for which Boieldieu expressly stated that the trivial name *tectus* was proposed as a substitute (*nom. nov.*).

8. The case of the name "Quenstedtoceras douvillei" Maire, 1938 raised by Dr. W. J. Arkell: A problem exactly parallel to that presented by the name *Ptinus tectus* Boieldieu, 1856, was raised in the first part of the application submitted to the International Commission by Dr. W. J. Arkell in regard to names published for species of ammonites by V. Maire in 1938. The nominal species so established were denominated as "*nom. mut.*" (presumably the equivalent of the expression "*nom. nov.*"); in all the cases in question the nominal species so named were based partly upon newly figured specimens and partly upon references to previously published descriptions and figures. In some cases the trivial name selected for the newly named nominal species was based upon the name of the author to whose previously published papers reference was made in the description of the newly named nominal species; for example, the new name *Quenstedtoceras douvillei* was published as a "*nom. mut.*", the species so named being based partly upon newly figured material and partly upon descriptions and figures previously published by Douvillé.

9. Three possible ways of interpreting names published in the manner in which the names "*Ptinus tectus*" and "*Quenstedtoceras douvillei*" were published by their respective authors: There are three ways in which it would be possible to interpret a trivial name published in the manner in which Boieldieu published the name *Ptinus tectus* and Maire published the name *Quenstedtoceras douvillei*. These are:—

- (1) The nominal species so named could be treated as being, at the time of the publication of its name, a composite nominal species comprising both the species bearing the name rejected and replaced by the new name in question and also the species described (and/or figured) under the new name. If this view were adopted, the nominal species concerned would become subject to the provisions of Article 31 of the *Règles*, as revised by the Paris Congress (1950, *Bull. zool. Nomencl.* **4**: 74-76); the new trivial name would then adhere to whichever of the comprised taxonomic species (i.e., either that to which the rejected and replaced name is applicable or the species which was actually described under the new name) was first selected under the foregoing Article by a subsequent author to be the species to which the trivial name should be applied. The application of Article 31 in such a case would automatically provide the newly named nominal species with a lectotype or with a figure or previously published description to represent the lectotype.

- (2) It would be possible to establish a rule under which a specific name (binominal combination of generic name and trivial name) published in the manner instanced by Dr. Hinton would be held to have been published twice over in different senses in the same paper: first, as applying to whatever species was represented by the nominal species (in the case cited by Dr. Hinton, the nominal species *Ptinus pilosus* White), for the name of which the new name was published as a substitute; second, as applying to the species actually described under the new name. If this view were taken, the author of the new name (in Dr. Hinton's example, the author Boieldieu) would be held to have published two names which were identical homonyms of one another. The relative precedence to be given to these names could then be determined by the application of the principle of page—and, if necessary, of line—precedence. This is the solution suggested by Dr. Hinton in his application in regard to the name *Ptinus tectus* Boieldieu, and which in a paper published in 1941 (*Bull. ent. Res.* **31** (4): 357-359) he had already provisionally adopted. Later this view was contested by Dr. W. J. Brown (1944, *Canad. Ent.* **76**: 9-10), who considered that no question of homonymy as between two names published by Boieldieu arose in this case which he argued should be settled under the provisions of Article 31 (see Alternative (1) above).
- (3) Finally, it would be possible to argue that, if a name is definitely published as a substitute for some other name, there can be no escape from the objective fact so established, the new name so published adhering in all circumstances to the species to which the rejected name is applicable. According to this view, it would be entirely irrelevant from a nomenclatorial point of view if the author giving the new name (say Boieldieu, when publishing the name *Ptinus tectus*) also at the same time erroneously applied it to some species other than that to which the rejected name was properly applicable. An author using a name in this way would, according to this view, merely have misidentified his new species (in Boieldieu's case, his Tasmanian insect) with a previously described species (in the present example, *Ptinus pilosus* White), which by an irrelevant coincidence the author concerned had renamed in the same paper. This is the solution advocated by Dr. Arkell in his application regarding the interpretation of V. Maire's ammonite names.

10. Considerations relevant to reaching a decision on the question of interpretation raised by such names as "*Ptinus tectus*" Boieldieu, 1856: There are certain considerations which, I consider, need to be evaluated in the Report ultimately to be submitted to the Commission in regard to this matter and on which, therefore, it would be extremely helpful to receive the views of interested specialists. The considerations in question may be summarised as follows:—

- (i) In some cases it would be relatively simple to determine in which of two senses (whether as a substitute name or as a name for a new

species) a given trivial name was first used in any given paper; in other cases (as in Maire's ammonite names) the two concepts are introduced so nearly simultaneously that it would be extremely difficult, if not, in some cases, impossible, to determine, even by applying the principle of line precedence, in which sense the name was first employed. It is inevitable, therefore, that, if a Rule were to be introduced that cases of this kind are to be treated as though the author concerned had published in the same paper two specific names, each a homonym of the other, it would often be impossible, by means of that Rule, to obtain a clear and unequivocal answer to the question at issue, namely to which of the two species concerned the trivial name should adhere, and, in consequence, such an answer could be obtained only by the reference of the cases in question to the Commission for individual decision. This solution is open also to the objection that it involves a fundamental distortion of the intentions of the author of the name in question, who certainly never regarded himself as applying the same name simultaneously to two different species. It would seem, therefore that this solution is not one which would be desirable to adopt if there is any other available which is free from these serious defects.

- (ii) A decision that cases such as that presented by the name *Pinus tectus* Boieldieu should be treated as constituting the publication of the name of a composite species and therefore that the question of the species to which the trivial name in question should adhere should be determined under Article 31 would provide a procedure which could be readily applied and one which would provide in each case a clear-cut answer, thus avoiding the necessity of referring individual cases to the Commission for decision. Where however we are concerned not (as in the above case) with the problem presented by a single trivial name having been applied to two distinct species, but with the problem of the specimens to be regarded as being eligible for selection as the lectotype of a nominal species expressly described by its original author as a *nom. nov.* and based partly upon new material and partly upon material that has already been described and figured, the application of Article 31 would not necessarily give an equally satisfactory result; for, as Dr. Arkell pointed out in his application in regard to Maire's ammonite names, the question of the author by whom the described material had previously been studied and the locality in which that material had been collected here becomes a matter of considerable importance. The first of these situations may be illustrated by the name *Quenstedtoceras douvillei* published by Maire as a "*nom. mut.*" partly for specimens previously described and figured by Douvillé and partly for fresh material figured for the first time by Maire himself. It could not be regarded as satisfactory if, under Article 31, one of Maire's new specimens were selected to be the lectotype of this species, in place of one of those studied by Douvillé, after whom the new substitute trivial name *douvillei* was given; for such a selection

would clearly do violence to Maire's intentions. An example of the second of the situations is presented by the name *Quenstedtoceras reesidei* published by Maire as a "nom. mut." and based partly upon American specimens previously described and figured by Reeside and partly upon additional material collected in France and figured by Maire for the first time. If in such a case the lectotype were to be determined under Article 31, it would be perfectly legitimate for an author to select as such one of the French specimens figured by Maire. The result would however be most unsatisfactory, for it would provide this species with a lectotype of French origin, notwithstanding the fact that the name *Quenstedtoceras reesidei* was published as a substitute name for an American species originally described and figured by the American Reeside. It is for these reasons that Dr. Arkell has recommended that, where a specific name is expressly published as a substitute name (by the use of the expression "nom. nov." or some equivalent such as "nom. mut.") for some other name (or for some invalid use of another name by a previous author), (1) the type specimen of the nominal species bearing the substitute name shall be the specimen which is the holotype of the nominal species, the name of which (or the name used for which) has been rejected in those cases where that nominal species had a holotype, or the lectotype of that species where a lectotype has been selected, and (2) that, where the original nominal species does not possess a holotype and has had no lectotype selected for it, the only specimens which shall be eligible for selection as the lectotype of the nominal species bearing the substitute name shall be the syntypes of the original species. As part of the foregoing proposal Dr. Arkell has proposed also that there should be inserted in the *Règles* two new *Recommandations* as follows: First, a *Recommandation* urging authors, when proposing substitute names for species described and/or figured by a previous author, not to select as the trivial name of that species a word composed of the earlier author's name or of the locality from which that author's specimens were collected, if it is not intended that the earlier author's specimens should constitute the syntypes of the newly named nominal species. Second, a *Recommandation*, urging that, where an author publishes a name for a species believed to be identical with one previously figured but incorrectly identified by some earlier author, the author publishing the new name should avoid using the expression "nom. nov." or its equivalent, unless the figures published by the earlier author are at least as good as those which could be provided from new material.

- (iii) It will be seen from the foregoing that the proposals submitted by Dr. Arkell deal with cases such as that presented by Boieldieu's name *Ptinus tectus* at least as satisfactorily as, if not better than, any of the other solutions which have been suggested, while his is the only proposal so far brought forward which deals satisfactorily with the kindred problem presented by names such as *Quensted-*

toceras douvillei and *Q. reesidei* published for ammonites by Maire in 1938.

11. Likelihood of the existence of divergent practice among specialists in interpreting names such as "*Ptinus tectus*" Boieldieu, 1856: It is likely in this, as in other cases where the meaning to be attached to a given provision in the *Règles* is in doubt, that the problem of interpretation presented by such names as *Ptinus tectus* Boieldieu has been dealt with differently by specialists in different groups, while in this particular case we know, from the particulars given in paragraph 9(2) above, that specialists in the same group have taken different views with consequent instability and lack of uniformity in the nomenclature of the species concerned. For the purpose of ascertaining the manner in which the rare cases of the foregoing type have been dealt with when they have arisen, it would be extremely helpful if specialists would be so kind as to furnish examples of any cases of this sort which they are aware of in their own groups.

12. Probable need for a saving clause to prevent the interpretation now to be given from causing confusion and undesirable name-changing in particular cases : Whatever decision is ultimately given by the International Congress of Zoology as to the interpretation of names of the kind with which we are here concerned, it is likely that the automatic application of that decision would give rise to confusion and undesirable name-changing in the minority of cases where that decision ran counter to current nomenclatorial practice. In order to deal with this contingency, it will, no doubt, be desirable, as in the case of generic names published in generic synonymies discussed in the immediately preceding paper in the present series of pre-Congress papers (1952, *Bull. zool. Nomencl.* 7 : 117—118), that the Congress, when taking its decision, should impose also upon the International Commission on Zoological Nomenclature the duty of taking such special action as may be necessary to prevent any objectionable disturbance of existing nomenclatorial practice from arising as the result of the new provision. Cases such as *Ptinus tectus*, where specialists in the same group are in disagreement with one another and in consequence have interpreted a given specific names in different ways will need to be dealt with individually on their merits, that is, either by applying the new rule (whatever it may be) to them or, if the case is considered to be of sufficient importance, by the submission of the case to the Commission as one possibly calling for the use by the Commission of its plenary powers.

13. Questions on which the advice of specialists is now sought : The questions on which the advice of specialists is now sought are:—(1) Do you know of any cases in your own group in which a specific name, when first published (i) was expressly stated to be a substitute name for some previously published specific name, and (ii) was also accompanied by a description of a given species (or of specimens belonging to a given species) different from that to which the rejected specific name is correctly applicable? If so, please give examples, at the same time stating how specialists have interpreted the specific name in question. (2) Which of the following possible rulings by the Com-

mission and the Congress would, in your opinion, be the best, in the sense of being the most logical and the most easily applicable ruling in such cases and the one calculated to lead to the minimum of disturbance in current nomenclatorial practice: (a) a ruling that a nominal species established in the foregoing manner is to be treated as a composite species and therefore that the species to which the new trivial name is to adhere should be a matter for determination under Article 31; (b) a ruling that in such a case two nominal species, bearing identical specific names (i.e. identical combinations of generic name and specific trivial name) are to be deemed to have been established, one of these names to be held to apply to the species bearing the rejected specific name, the other to the species described under the new name, the relative priority to be accorded to these two homonyms to be determined in accordance with the procedure laid down for determining the relative priority to be accorded to any pair of names published in the same book and on the same date; (c) a ruling that the new specific name in question is to be treated as applying automatically to the species bearing the rejected name (i.e. that such a name should be treated strictly as a substitute name), the other use of the new name being treated as having been due to a misidentification on the part of the author concerned?

(b) Case where a trivial name, when first published, is both (1) directly applied to a given species or specimens and (2) is implicitly treated as being a substitute for some previously published name or for some incorrect use of such a name

14. Historical introduction: In the second part of the application discussed in paragraph 2 above, Dr. W. J. Arkell raised a problem which closely resembles that raised by the names *Plinus tectus* Boieldieu (paragraph 7 above) and *Quenstedtoceras douvillei* Maire (paragraph 8 above) but which differs in that the name calling for interpretation was not expressly published as a substitute name (nom. nov.) for a previously published name or for a particular previously published usage of a name, though it was made clear by the author of the new name that, in part, the new name was applied in this sense.

15. Two examples cited in Dr. Arkell's application: Dr. Arkell illustrated the situation specified above by citing, as examples, the specific names *Quenstedtoceras lorioli* Maire, 1938, and *Cardioceras uhligi* Maire, 1938. These examples are exactly parallel to one another in every respect:—(1) Each of these nominal species was described by Maire as a new species ("sp. nov."); (2) Each of these nominal species was described, partly on the basis of new material and partly upon the basis of previously published figures; (3) In each case the name of the previous author by whom the cited figures had been published was selected by Maire as the basis for the trivial name of the new nominal species—

in the first instance, the name de Loriol, in the second instance, the name Uhlig. Dr. Arkell points out in his application that an exactly similar situation would arise if an author published a name for a new nominal species (i.e. name published as "sp. nov." or equivalent), that species being based partly upon new material and partly upon previously published descriptions or figures, the word chosen for the trivial name of the new nominal species being composed of, or based upon, the name of the locality in which one or more of the previously described or figured specimens then cited had been obtained.

16. The proposal submitted by Dr. Arkell: The proposal submitted to the Commission by Dr. Arkell was that in a case such as that presented by the specific name *Quenstedtoceras lorioli* Maire the only specimen or specimens which should be regarded as eligible for selection by a later author as the lectotype of the species concerned should be the specimen or specimens described by the earlier author, which had been cited by the author of the new specific name, when publishing that name, i.e., that in the case instanced above the only specimens described, figured or cited by Maire when publishing the new name *Quenstedtoceras lorioli* which should be eligible for selection as the lectotype of the nominal species so named should be those specimens for which Maire cited bibliographical references to earlier papers by de Loriol. Dr. Arkell further proposed that a similar rule should apply to cases where the trivial name of a nominal species published as a new species is composed of, or is based upon, the name of the locality in which one or more of the specimens, to previously published descriptions or figures of which bibliographical references were cited in the description of the new nominal species. Under a provision such as that proposed above, if enacted in mandatory form, the new material brought forward by the author (e.g., Maire) by whom the new specific name was published would be rendered ineligible for selection as the lectotype of the nominal species so named, while if the provision took the form of a non-mandatory *Recommendation*, that material would be material which authors would be recommended to ignore when selecting a lectotype for such a species.

17. Questions on which the advice of specialists is now sought : The questions on which the advice of specialists is now sought (i.e. the questions supplementary to those enumerated in paragraph 13 above) are : (1) Are you in favour of a provision that, where a new nominal species (i.e. a nominal species described as *sp. nov.* or equivalent) established without a designated or indicated holotype (a) is based partly upon previously published descriptions and/or figures and partly upon new material and (b) is given a trivial name based upon the name of the previous author by whom descriptions and/or figures cited by the author of the new specific name had been published, the only specimen or specimens eligible for selection as the lectotype of the new nominal species so named should be that specimen or those specimens which the earlier author had described and/or figured in the work cited by the author of the new specific name ? (2) Are you in favour of a provision under which, in a situation differing from that described above only in that the word chosen

as the trivial name of the new nominal species is composed of, or is based upon, the name of the locality in which were obtained the specimen or specimens, to earlier published descriptions or figures of which a bibliographical reference is given by the author of the new specific name, the only specimen or specimens which would be eligible for selection as the lectotype of the nominal species so named would be that specimen or those specimens so referred to, which had been obtained in the locality so indicated?



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IMPORTANT NOTICE

The papers published in the present Part have been prepared for the express purpose of drawing attention to certain important questions relating to the clarification, amendment and expansion of the *Règles Internationales* which will be considered by the Fourteenth International Congress of Zoology at its meeting in Copenhagen in 1953.

Interested specialists are particularly invited to furnish comments and advice on the foregoing questions, so that account may be taken of their views in the formulation of recommendations to the Copenhagen Congress.

Specialists responding to the foregoing appeal will render a double service to the International Commission on Zoological Nomenclature, if, when they furnish statements setting out their views, they will be so good as to send those statements, typewritten on one side of the page only, double-spaced and with wide margins. All such statements should be furnished in duplicate.

Unnecessary work and consequent delay are caused in the office of the International Commission, if statements on two or more subjects are sent on a single sheet of paper, owing to the copying which this involves. Correspondents are therefore particularly requested, when furnishing notes to the Commission on more than one subject, to use a separate sheet of paper for the note on each subject.

All communications should be clearly marked with the Commission's Reference Number and should be addressed to FRANCIS HEMMING, C.M.G., C.B.E., Secretary to the International Commission on Zoological Nomenclature, 28 Park Village East, Regent's Park, London, N.W.1, England.

VOLUME 6

This publication of Volume 6 of the *Bulletin*, which deals with applications relating to individual nomenclatorial problems, was interrupted to permit of the publication of the present volume relating to general problems to be submitted to the Copenhagen Congress in 1953. The remaining Parts of Volume 6 will be published at an early date.

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Edited by

FRANCIS HEMMING, C.M.G., C.B.E.

Secretary to the International Commission on Zoological Nomenclature



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BULLETIN OF ZOOLOGICAL NOMENCLATURE

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15th March, 1952

ON THE QUESTION WHETHER " NEOTYPES " SHOULD BE RECOGNISED IN THE " RÈGLES " AS A CATEGORY OF TYPE SPECIMEN: AN APPEAL TO ZOOLOGISTS FOR ADVICE

By FRANCIS HEMMING, C.M.G., C.B.E.

(*Secretary to the International Commission on Zoological Nomenclature*)

(**Commission's reference Z.N.(S.)358**)

(For the decision by the Thirteenth International Congress of Zoology
that an investigation should be made in regard to this subject, see 1950.
Bull. zool. Nomencl. **4** : 192-193)

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General considerations

1. Introductory : The present paper is concerned with the question whether "neotypes" should be recognised in the *Règles* as a category of type specimen and, if so, under what conditions and subject to what safeguards. The present is the sixth of the seven problems relating to the *Règles* which the Thirteenth International Congress of Zoology at its meeting held in Paris in 1948 considered in a preliminary fashion but on which it took no definite decisions, taking the view that the problem required further and more detailed consideration before decisions were taken thereon. The Congress accordingly invited me, as Secretary to the International Commission on Zoological Nomenclature, to confer on this subject with interested specialists with a view to the preparation of a comprehensive Report, with recommendations, for submission to the Fourteenth International Congress of Zoology when it meets in Copenhagen in 1953.

2. In the interval which has elapsed since the Paris Congress, I have taken every opportunity that has offered to obtain the views of interested specialists on this subject. This has led me to two conclusions: first, that the lack of type material may in certain circumstances offer an insuperable obstacle to the attainment of stability in nomenclature at the species-name level and therefore that there is a need for the insertion in the *Règles* of a provision which will enable a definite meaning to be attached to a given trivial name and thus put a stop to the endless discussion and pointless argument which has in many cases been going on for years, the continuation of which would otherwise be inevitable; second, that for the foregoing purpose so many workers over so wide an area of the Animal Kingdom have already attempted to meet the foregoing difficulty by the erection of unofficial "neotypes" that there is already a strong presumption that the official recognition of the "neotype" concept would be in accordance with the wishes of large numbers of zoologists. The opposition which has hitherto been evinced towards "neotypes" seems, on the other hand, to spring not so much from hostility towards "neotypes" as such as from opposition to the private and unofficial creation of "neotypes" and to fears that, if the "neotype" concept were to be officially recognised, the provisions relating to this class of type specimen might not be hedged in with sufficient safeguards to prevent this innovation from being seriously abused. In the present survey of the problem, I have attempted to set out as fairly as possible the disadvantages as well as the advantages involved in the recognition of "neotypes." Believing, as I do, that the general wish of zoologists will be that the Congress should recognise the "neotype" concept, I have however devoted a considerable amount of time to an examination of the practical problems which would have to be solved if any system of "neotypes" were to be made workable. Under each of the headings involved, I have also drawn up tentative suggestions to form the basis of discussion, if the Copenhagen Congress were to decide to pursue this subject.

3. As in the case of the problems dealt with in the earlier papers constituting the present series, I hope very much that Nomenclature Committees of Museums

and other scientific institutions will be good enough to furnish statements of the views of their members both on the general question whether it is desirable that "neotypes" should be recognised in the *Règles* and, if they are in favour of such action, on the suggestions put forward in the present paper on each of the problems upon which decisions would need to be taken by the Congress. Corresponding statements from individual specialists, particularly those who have themselves had occasion to consider the practical application of the neotype principle, are also very much desired.

4. It is particularly necessary in a case such as the present, where the suggestion is that provisions should be inserted in the *Règles* on some aspect of nomenclature which has not yet been made subject to international regulation that the data assembled for consideration by the International Congress of Zoology should be as comprehensive as possible and should be made available as long in advance of the Congress as may be found to be practicable. It is my hope therefore that it will be possible to publish in the *Bulletin of Zoological Nomenclature* the Report which I have been charged to prepare as far ahead as possible of the Copenhagen Congress. Specialist Committees and individual specialists who are interested in the present problem and who desire to express their views during the preliminary discussion of the issues involved will therefore be rendering a doubly valuable service if they will despatch the statements setting out their views in time for those statements to reach the Secretariat of the Commission not later than 31st July, 1952.

5. For the reasons explained in the preliminary note to the present series of papers (1952, *Bull. zool. Nomencl.* **7**: 1-3), the work of the Secretariat will be greatly assisted if communications on the present subject are typewritten on one side of the paper only, double-spaced, with wide margins, and furnished in duplicate. The names of signatories should be typewritten as well as written.

6. All communications sent in response to the present appeal for advice should be clearly marked with the Commission's Reference Number Z.N.(S.)358, and should be addressed to myself, as Secretary to the Commission (address: 28, Park Village East, Regent's Park, London. N.W.1, England).

(a) Problems calling for consideration in connection with the suggested recognition of "neotypes"

7. **Need for adequate safeguards against abuse if neotypes are to be recognised in the "Règles"**: When in 1945 the proposal that neotypes should be recognised in the *Règles* was first formally placed before the International Commission and the zoological public generally by the publication of an application on this subject received from Dr. Don L. Frizzell and Dr. Harry E. Wheeler (Stanford University, California, U.S.A.) (*Bull. zool. Nomencl.* **1**: 106-108), I published a short note (Hemming, 1945, *ibid.* **1**: 109-111), drawing attention to certain of the practical problems which would need to be solved and stressing the need for the adoption of rigorous safeguards to prevent the neotype system, if adopted, from being exploited for commercial

reasons or otherwise abused. Every specialist who has since written to me on this subject or with whom I have discussed it has agreed that, if neotypes are to be recognised, the most stringent provisions will be needed to forestall abuse of the foregoing kind. It seems to be generally agreed that the first of the provisions to be inserted in the *Règles* if neotypes are to be granted official recognition should stipulate that no specimen is eligible for selection as a neotype unless it is the property of a museum or other public institution or, on being so selected, is presented to, or placed on permanent loan in, such an institution.

8. Code of Ethics in relation to the designation of neotypes: The exploitation of neotypes for purposes of financial gain is not however the only form of abuse against which it is necessary to guard; for, if workers in any museum or other public institution were to be free to designate neotypes to an unlimited extent, there would—human nature and institutional pride being what they are—be a serious risk that some institutions might designate neotypes for species of which that institution had never possessed any of the original type material and in conditions where some other institution had a much stronger claim to be the possessor of neotypes, if these were to be established. For example, where, either through air-attack in time of war or through some natural calamity, such as fire or earthquake, type specimens possessed by a particular institution were destroyed, that institution clearly has a much stronger moral claim to be the possessor of any neotypes subsequently established than has any other institution, and it would be an abuse of the system of neotypes if any other institution were to be free to designate neotypes for the species concerned from among specimens in its own collection. On the other hand, it would be quite impracticable for a variety of reasons to include in the *Règles* a provision that neotypes are only to be designated from among specimens possessed by the institution in which the original type material had formerly been deposited; for (1) the missing type material of many species is not known ever to have been in a museum at all; (2) material suitable for designation as neotypes may not be possessed by the museum concerned or other material more suitable for this purpose may be in the possession of some other museum. While everyone will agree that, when a neotype is designated, due account should be paid to moral claims which any institution may have to be the one in which that neotype should be deposited, it is quite evident that this end cannot be secured by any specific provision to be inserted in the *Règles*; it is equally evident that the insertion in the *Règles* of a mere *Recommandation* such as the Code of Ethics (in regard to the giving of substitute names to species possessing invalid names) would not provide a safeguard of adequate strength. We are thus forced to the conclusion that the only way of ensuring against serious abuse of the neotype system would be the institution of some central authority, without the approval of which no neotype could be validly established.

9. Need for the avoidance of duplicate neotypes: It cannot be doubted that, if any worker were to be free to designate neotypes from among the specimens contained in the collection of any museum or similar institution, duplicate neotypes would constantly be created, just as today species already possessing valid names are constantly being re-described as new species. The

existence of duplicate or competing neotypes could not fail to lead to serious confusion, and would moreover bring discredit upon the whole neotype system. It is clearly essential therefore that adequate steps should be taken to guard against this danger. It is immediately evident that this object can be secured only by an arrangement under which no neotype designation could be validly effected unless that designation were registered with some central authority which alone would be in a position to ensure that no such designation was permitted if a neotype had already been designated for the species in question.

10. Need for the safe preservation of neotypes and the provision to specialists of reasonable access for the study of neotypes: We have seen that, in order to ensure against the risk of the commercial exploitation of neotypes, it must be an essential feature of any scheme for the official recognition of this category of type specimen that no specimen shall be recognised as a neotype unless it is in the possession of, or in the permanent custody of, some museum or other public institution. Such a provision should be sufficient for the particular purpose noted above, but, unless supplemented in two directions, it would not necessarily provide the guarantees necessary for the due preservation of neotypes or for the free study of neotypes by interested specialists. It is common knowledge not requiring any elaboration that not all museums and other public institutions possessing zoological and palaeontological collections exercise at all times a sufficiently high degree of care of the specimens entrusted to their charge to ensure the preservation of those specimens from risk of deterioration, destruction or loss. Clearly, if a new category of type specimen (neotypes) is now to be recognised, it is important that all practicable steps should be taken to ensure that type specimens of this category shall be deposited only in institutions which can be relied upon to take adequate care of them. Further, as is well known, the ability and willingness of institutions to provide facilities for the study of their collections by outside specialists varies very greatly. Here again, there will be general agreement that, if the establishment of neotypes is to be permitted, that permission should be limited to specimens belonging to, or deposited in, institutions which can be relied upon to permit reasonable access to those neotypes for study by interested specialists. Neither of the foregoing *desiderata*—as is evident—can be obtained by means of an express provision in the *Règles*, for clearly no institution can be expected voluntarily to refuse to accept neotypes for its collections on the ground that it is not competent either properly to look after those specimens or to provide adequate opportunities for their study. These objects can, in fact, only be secured by entrusting to some central body the duty of approving proposals for the establishment of neotypes, for such a provision would, *inter alia*, provide that central authority with a discretion in relation to all aspects of proposals so submitted.

11. Need for the publication of full descriptions and figures of specimens proposed to be designated as neotypes: Since the sole object of establishing neotypes and the only utility of neotypes when established is to provide the clearest possible standard of reference for the identification of the species in question, it is essential that any scheme for the recognition of neotypes should provide that, as an indispensable preliminary to the designation of a

specimen to be a neotype, there shall be published a full description and figure (or figures) of the specimen proposed to be so designated. Here again, if a uniformly high standard is to be assured, there will be a need for some central authority charged with the duty of ensuring that this requirement is fulfilled.

12. Circumstances in which the designation of a neotype should be permitted: In the discussions which have taken place on the question of establishing neotypes, it has generally been assumed that the purpose of this category of type specimen should be to provide a standard of reference in cases where the whole of the original type material on which a given species was described has been either lost or destroyed. This is undoubtedly the principal class of case for which neotypes are required. It is not however the only class of case, for it sometimes happens that the need for an adequate reference specimen is just as great where some of the original type material still survives as it is when the whole of that material has disappeared. Naturally this situation is not confined to cases where syntypes only are available but may arise also where the lectotype or even the holotype of the species is still in existence. This kind of situation may be illustrated by the following examples: (a) In the case of many Recent species positive identification is dependent upon the examination of some particular structure, and it may easily happen that the holotype or surviving syntypes (where no holotype was designated by the original author) are so broken or otherwise in such bad condition as to be useless for the purpose of providing a standard for identification; (b) In the case of Fossil species the surviving type material may also be too fragmentary to afford a satisfactory basis for the revision of the species concerned; in addition, such type material may consist of casts only, entirely lacking the essential internal structure. In cases of this kind, it is clearly just as necessary that a neotype should be provided as it is in cases where the whole of the original type material has disappeared.

13. Importance of ensuring that a specimen designated to be a neotype should conform as closely as possible with the original description of the species concerned: In designating a specimen to be a neotype, it is clearly desirable that normally the specimen should conform as closely as possible with the original description of the species concerned and with any figure which may have been published with the original description. For example, if it is clear from the original description that the description was based exclusively upon a specimen (or specimens) of one sex only, the specimen to be designated as the neotype should be of that sex, except where the characters diagnostic for the species are much more clearly marked in the other sex. Similarly, where a species has more than one annual generation, the successive generations differing from one another, the specimen to be designated as the neotype should be of the annual generation described or depicted in the original description of the species. A similar principle should, it will be agreed, be observed, where the species was originally described from a specimen belonging to one of two or more dimorphic forms. It may however happen occasionally that a species for which it is desired to establish a neotype was based by its original author upon some aberrant individual form; in such a case, it may be thought desirable to designate as the neotype a more representative example.

The conclusion which appears to emerge from the foregoing considerations is that, although in general it is desirable that a specimen designated to be a neotype should possess as many as possible of the known characteristics of the specimen (or specimens) upon which the species in question was originally based, there may be circumstances in which a departure from this principle in one or more respects would be desirable. Accordingly, it seems that this is not a matter on which mandatory provisions should be included in the *Règles*; it would however be desirable to include a *Recommendation* on this subject, in order to indicate to workers contemplating the designation of a neotype the principles which it is desirable should be followed, so far as individual circumstances permit.

14. Question whether a specimen designated to be a neotype should be from the same locality as that from which the species concerned was originally described: In accordance with the general principle that a specimen selected as a neotype should resemble the specimen from which the species was originally described as closely as may be found to be practicable, it is clearly desirable that, other things being equal, a neotype should be a topotypical specimen. For a variety of reasons however this may not always be practicable. The following examples illustrate circumstances, entirely different in character, in each of which however it would be impossible to give effect to the foregoing principle: (a) In some cases a Recent species was originally described from an extremely limited locality and has since become extinct in that locality as the result of human agency (e.g. building development, drainage schemes, etc.) or natural causes (such as flooding, erosion, volcanic action or the like); in such cases it would be impossible to obtain fresh material from the type locality, and the choice would rest between designating as the neotype some old—and possibly unsatisfactory—specimen labelled as having been taken in the type locality or entirely satisfactory newly taken material from some other locality. (b) In the case of Fossil species, it might be impossible to obtain topotypical material, not because the site had been destroyed but because the condition of the rocks from which the type material had originally been obtained was such that no specimens were obtainable in a sufficiently good state of preservation to permit of the study of internal structure, an essential condition to the designation of a neotype. In such cases the insistence upon a rule that a neotype must be a specimen from the same locality as the original type material of the species concerned would mean that for the particular species concerned it might be impossible to find a specimen which was both in good condition and was also eligible for selection as a neotype. Such a rule would therefore clearly stultify the purpose for which it is proposed that official recognition should be given to neotypes. Accordingly, it seems to me that, while it is desirable that a specimen designated to be a neotype should, wherever possible, be one collected from the same locality, or, in the case of a parasitic species from the same host species, or, in the case of a fossil species, both from the same locality and in rocks of the same geological age and in the same horizon, i.e. at the same depth above or below some recognised zone, as the specimens upon which the species was originally founded, it would not be desirable to make this a universally binding mandatory provision. It is suggested therefore that this is a matter which could only be appropriately

dealt with in the *Règles* by means of a *Recommandation*. It will be appreciated that, if—as we have already seen appears necessary for quite other reasons—the scheme were to include a provision that no specimen was to be officially recognised as a neotype until it had been approved as such by some central body, it would be within the power of that central body to ensure that the principle set forth above was duly observed in every case where it was practicable to apply it. Where it is judged necessary to designate as a neotype a specimen not obtained from the original type locality, the locality from which the neotype was obtained would need to become the revised type locality of the species. We have to remember also in this connection that, although the concept of a “type locality” in the case of Recent species and, in the case of Fossil species, the above concept and also the concept of a “type horizon” are universally recognised by specialists, neither of those concepts finds at present any recognition in the *Règles*. There is thus at present no means for selecting a “lectotype locality” from a number of “syntype localities” or, in the case of a Fossil species of selecting a “lectotype horizon” from among two or more “syntype horizons” cited by the original author of a nominal species; nor are there any means at present (1) by which to restrict an unduly vague or imprecise “type locality” or “type horizon,” (2) for making any authoritative and binding correction of a “type locality” or “type horizon” when that cited by the original author of a nominal species is manifestly incorrect, nor (3) for supplying an authoritative “type locality” or “type horizon” for a nominal species, the original description of which did not contain these essential particulars. These omissions constitute a serious cause of confusion and must clearly be made good in any comprehensive plan for promoting uniformity and stability in nomenclature. Proposals for dealing with this matter are accordingly included in the discussion of this—the most important single problem now awaiting decision—given in the immediately following paper in the present series (pp. 172–180). The subject is referred to here because, as will be appreciated, the provision of a satisfactory method for determining and, where necessary, restricting “type localities” and “type horizons” is an indispensable prerequisite for the adoption of any scheme for the official recognition of neotypes.

15. Status of any surviving type material when a neotype has been established: In our consideration of the circumstances in which it should be permissible to establish a neotype (paragraph 12 above), we have seen that in certain conditions it may be just as important to establish a neotype for a species, of which some of the syntypes or even the lectotype or holotype are extant, as it is in the case of a species, the whole of the original type material of which has been lost or destroyed. Accordingly, it would certainly be necessary that the scheme to be included in the *Règles* should provide that, on being officially established, a neotype is to take precedence over any such surviving type material. There is a further aspect of this question which will require to be considered: this is the situation which from the point of view of nomenclature would arise if, after a neotype had been duly established for some species of which either (1) all the original type material had disappeared or (2) the surviving type material was in such bad condition as to be insufficient to provide a firm basis for the identification of the species in question, the

original type material, in the first case, or additional syntypes, in the second case, were to be found. If such a discovery were to be made, it might be found—and it is to be hoped that in most instances it would be found—that the neotype and the rediscovered type material were referable to the same species; it might occasionally happen, however (particularly, perhaps, in the case of Fossil species) that the neotype belonged to a different species from that to which the original type material was referable. In either case a problem of nomenclature would arise, for which it is desirable that provision should be made in any scheme authorising the establishment of neotypes. It would clearly be most undesirable that on the rediscovery of type material previously supposed to have been lost a neotype established for the species in question should automatically be deprived of its status as the unique specimen which alone constitutes the ultimate standard of reference for the determination of the identity of the species in question. Some provision to ward against this danger should therefore certainly be included in any scheme authorising the establishment of neotypes. There are two possible ways by which this end could be achieved: (a) It would be possible to provide in the *Règles* that, on the establishment of a neotype, all surviving type material, whether at that time known to be in existence (this being a provision which, as already shown, will in any case be necessary for other reasons) or discovered subsequent to the establishment of a neotype for the species in question, should be deprived of its status as such. (b) Without going so far as (a) above, it would be possible to include in the *Règles* a provision that, in the circumstances assumed, a neotype is to retain its status as such unless and until, on the facts being laid before it, the International Commission on Zoological Nomenclature were otherwise to direct. It is suggested that of these alternatives, (a) is preferable to (b), since it recognises more fully the essential consideration that the sole purpose of authorising the establishment of neotypes is to provide a final and irrevocable standard for the identification of a species in cases where there is no surviving type material or where the known surviving type material is insufficient for this purpose.

16. Need for publicity and for consultation between specialists prior to the establishment of a neotype: The official recognition of a specimen as a neotype amounts in effect to the provision of an entirely new basis for the identification of the species concerned, while retaining for that species its original name with its original author and priority. It is extremely important therefore that, before any specimen is officially recognised as a neotype, there should be the fullest consultation between interested specialists. For this purpose it is quite clear that any scheme for the recognition of neotypes must include mandatory provisions relating to the giving of public notice of every proposal for the establishment of a neotype. The notice so given should, it is suggested, be made in a form designed to serve a twofold purpose: (1) to draw attention to the proposal that a neotype should be established for the species concerned; (2) to provide an opportunity to institutions or individuals possessing, or believing themselves to possess, type material of the species concerned previously believed to have been lost to bring forward evidence on this subject for consideration before a decision is taken to establish a neotype. It is suggested further that the period of public notice should

not be deemed to start (1) until the application for the establishment of the neotype concerned has been published in the *Bulletin of Zoological Nomenclature* and (2) until after the publication of a paper containing a full description and figures of the specimen proposed to be designated as the neotype, in those cases where detailed particulars on this subject are not included in the application referred to in (1) above.

17. Length of the period of public notice desirable before a proposal for the establishment of a neotype is approved: The subject matter on which consultation is needed before a neotype is established is necessarily more complex than that involved in a proposal that the Commission should use its plenary powers for the purpose (say) of validating some well-known name in current use; for in the former case it is necessary for specialists to consider not only whether the establishment of a neotype is desirable, but also whether the specimen proposed to be so designated is in every respect the most suitable for the purpose; in addition, it is very desirable that full opportunity should be given for the bringing forward, for consideration, of alleged type material of the species, the existence of which was not known to the specialist by whom the proposal for the establishment of a neotype is submitted. In the case of applications involving the use of the plenary powers the issue involved is both much narrower and much simpler in character; the problem involved is in most cases extremely well known to the specialists concerned and the only question at issue is whether or not it is desirable in the interests of nomenclatorial stability that the plenary powers should be used. It is suggested, therefore, that in these circumstances consideration should be given to the question whether the period of prescribed public notice should not be longer in the case of proposals for the establishment of neotypes than for proposals involving the possible use of the plenary powers. The period of notice in plenary powers cases is now one of six calendar months from the date of the publication of the application in question in the *Bulletin of Zoological Nomenclature*, having been reduced from twelve months by the last International Congress of Zoology (Paris, 1948). The only purpose of recognising neotypes as a category of type specimen, if such is decided upon, will be to provide means for meeting a practical need; from this point of view it would clearly be wrong to impose an unnecessarily long period of notice before decisions could be taken in such cases, for the imposition of such a restriction would deprive the new provisions of much of their practical utility. On the other hand, in a matter of this kind it is extremely important that an adequate period should be provided for bringing such proposals to the attention of interested specialists and for enabling such specialists to make known their views on the complex problems involved. It is difficult to strike a satisfactory balance between these opposing desiderata. On the whole, my feeling is—and I put forward this suggestion for consideration—that it would be wise at least in the initial period to fix the prescribed period of notice in neotype cases at twelve months.

18. Neotypes and the "Official List of Specific Trivial Names in Zoology": Clearly no decision more vital to the interpretation of a specific name could be taken than one establishing a neotype for the species so named.

It will be evident therefore that it would be essential in any circumstances that the trivial name of every nominal species for which a neotype is established should be entered upon the foregoing *Official List* with a note regarding the neotype established, even if the Commission were not already under instructions from the International Congress of Zoology to enter upon it every valid trivial name in respect of which a decision is taken by it. In every case the entry on the *Official List* should include particulars of the locality in which the neotype was obtained and of corresponding additional data in the case of Fossil species and parasitic species (see paragraph 14 above).

19. Relation of neotypes to restricted identifications previously effected : It would be important to ensure that, if neotypes are recognised, provision should be made to secure that the selection of a specimen to be a neotype does not run counter to any restrictions or restricted identifications previously effected. First, where a nominal species was originally published as a composite species but was restricted to a single species by the mechanism provided by Article 31, it would be essential that the specimen selected as the neotype should belong to the species to which the name of the originally composite species had thus been restricted. Similarly, where a nominal species, though not at the species level a composite species, was nevertheless originally based upon examples of two or more subspecies of the same species and the subspecies to which the trivial name should adhere had later been determined under the provisions of the foregoing Article, it would be essential to secure that the designation of a neotype is made in such a way as to avoid any change in the subspecies to be regarded as nominotypical. Again, in many cases an author, acting as a reviser, has defined the content of some nominal species by identifying the taxonomic species represented by that nominal species with the species represented by some later and more detailed description or figure ; in consequence that later description or figure has come to be accepted as the standard to be used for reference purposes in the identification of the species concerned. If in such a case it were to be desired to designate a neotype, it would be important that the neotype designation so made was consistent with the standard previously established in the foregoing manner. If it were decided to provide means in the *Règles* for the establishment of neotypes, that procedure would afford an absolutely firm basis for the identification of whatever might be the species in question. There would therefore no longer be any need for the powers conferred upon the Commission by the Thirteenth International Congress of Zoology, under which the Commission was given the power to determine the species to which any trivial name should apply (1950, *Bull. zool. Nomencl.* 4 : 324), for those powers were designed to secure exactly the same end as that which neotypes would serve. In such circumstances the foregoing powers should certainly be revoked, for it would be most undesirable that the *Règles* should contain more than one set of provisions relating to any one subject. Finally, the revocation of the foregoing powers should be accompanied by a provision confirming the small number of decisions already taken by the Commission under those powers. Some of those decisions related a particular trivial name to a figure and not to a specimen and it would probably be found desirable that the confirming provision should include some means for the substitution, as the basis of the identification, of a neotype for the figure cited

in the decision already taken by the Commission. In one case (*Papilio plexippus* Linnaeus, 1758), the figure selected by the Commission to serve as the basis for the identification of a species has since been found unsatisfactory at the subspecies level (1950, *Bull. zool. Nomencl.* 4 : 361) and the defect so disclosed should be remedied by the substitution of a neotype for the figure already designated by the Commission, the specimen so designated to belong not only to the species in question but also to the subspecies commonly accepted as being the nominotypical subspecies of that species.

20. Proposed grant to the International Commission on Zoological Nomenclature of the exclusive right to designate neotypes : We have seen that in a number of essential respects the intervention of some central body would form an essential feature of any scheme for the grant of official status to individual neotype specimens, e.g. (1) on the question of the appropriateness of a given institution, as contrasted with other institutions, to be the institution in which a specimen proposed to be designated as a neotype should be deposited (paragraph 8), (2) for the purpose of ensuring against the risk of the establishment of duplicate neotypes (paragraph 9), (3) for the purpose of deciding whether the institution to which a specimen proposed to be designated as a neotype belongs or in which it is proposed to place such a specimen on permanent loan is one where there is a reasonable prospect that proper steps will be taken to preserve the specimen proposed to be selected as a neotype and to provide interested students with access to that specimen for the purpose of study (paragraph 10), (4) for the purpose of ensuring, in consultation with specialists in the group concerned, that the description and figures of the specimen proposed to be designated as the neotype of any given species that have been published in connection with or, prior to, the proposed designation of that specimen as the neotype of the species come up to the requisite standard of accuracy and completeness (paragraph 11), (5) for the purpose of ensuring that the specimen proposed to be designated as the neotype of a species should conform as closely as possible with the original description of the species (paragraph 13), (6) for deciding whether the proposed neotype should be a topotypical example (paragraph 14). These are functions which only the International Commission on Zoological Nomenclature is in a position to discharge. It is accordingly suggested that if the neotype concept is to be recognised in the *Règles*, the power to designate specimens to be neotypes should be vested exclusively in the International Commission and that the grant of this right should be accompanied by a provision making it the duty of the Commission, when designating specimens as neotypes, to pay regard, *inter alia*, to the six considerations specified in the earlier part of the present paragraph. The scheme should include a provision that, as an essential part of the designation of a specimen to be a neotype (or of the giving of legal force to an unofficial neotype established prior to the introduction of the scheme) the trivial name of any species for which a neotype is designated should be registered on the *Official List of Specific Trivial Names in Zoology*, the entry so made to include a reference to the specimen so designated as neotype, together with the particulars relating thereto, paragraph 18 above.

21. Procedure proposed to be adopted by the International Commission when considering an application for the designation of a neotype :

The decision involved when the Commission grants an application for the designation of a neotype for a given species will be one which not only calls for a high sense of responsibility but will also demand exceptional care and will require the fullest preliminary consultation with interested specialists in the group concerned. For these reasons it is suggested that the scheme conferring upon the Commission the power to designate neotypes should be made subject to certain exceptional procedures not required in applications relating to other problems of nomenclature. The special procedures which it is suggested should be prescribed in the scheme are discussed in the two immediately following paragraphs.

22. Proposed grant to the International Commission of power to prescribe rules regarding the information to be furnished in any application for the designation of a neotype : Experience shows that very few applications contain the whole of the requisite information at the time when they are first submitted to the Commission ; it is for this reason that, even if the Commission possessed (as it does not) the staff and funds to enable it to deal as rapidly as possible with all applications submitted to it, the consideration of many applications would be delayed by reason of the need for obtaining essential particulars omitted from those applications when first submitted. The amount of detailed information required in a normal application is considerably less than would be needed in an application for the designation of a neotype, and it must certainly be expected that at least in the initial stages after the introduction of the scheme a high proportion of the applications received would be incomplete in a greater or less degree. In these circumstances it would be helpful to applicants, would save time and would relieve the Commission of unnecessary expense if the Commission were to be empowered to prescribe, by order, the information to be furnished in applications relating to the designation of neotypes and similar matters, and it is suggested that provision for this should be made in the scheme.

23. Need for a high degree of participation by interested specialists in applications for the designation of neotypes of species belonging to their respective groups : The purpose of creating neotypes is to facilitate the conduct of taxonomic work by removing doubts as to the identity of the species to which given trivial names are applicable. In these circumstances it will be generally agreed that it is very important to secure that, if the neotype concept is to be recognised in the *Règles*, the procedure to be devised for regulating the designation of individual neotypes should be such as to ensure a high degree of participation by interested specialists in the discussions leading up to decisions on such matters and a predominant influence by such specialists upon the nature of such decisions. To secure the first of these desiderata, I have suggested (a) that the scheme should impose an obligation upon the Commission to give public notice of the receipt of applications for the designation of a neotype in the same way that such notice is required in the case of applications involving the possible use of the plenary powers (paragraph 16) and (b) that, in view both of the complexity of the issues involved in such applications and the need for ensuring that decisions thereon should be as complete as possible and should be as technically satisfactory as care, con-

sultation and study can make them, the period of notice in relation to applications belonging to this class of case should be extended from one of six months to one of twelve months (paragraph 17). The second of the foregoing desiderata should, I suggest, be attained by the form of wording to be used in the *Règles* defining the duties of the Commission when considering applications for the designation of neotypes. What I have in mind—and what I now put forward for consideration—is that the wording to be used should be such as to make it clear that the function of the Commission in relation to an application for the designation of a neotype shall be substantially confined (1) to its satisfying itself that the general principles laid down in relation to the designation of neotypes (i.e. those summarised in paragraph 20 above) have been complied with in the application (2) to its taking the prescribed steps to obtain the views of interested specialists in regard to the application, and (3), on having satisfied itself in regard to the matters specified in (1) above and having taken the action specified in (2) above, to giving the stamp of official approval to the proposal submitted by designating the neotype recommended and by placing the trivial name of the species concerned on the *Official List of Specific Trivial Names in Zoology* with an appropriate reference to the designation of a neotype so made, together with the supplementary particulars specified in paragraph 18 above. A procedure of the foregoing kind would, it is believed, provide all the safeguards required. In addition, it would in effect make the Commission in this matter little more than the agent for giving effect to the wishes of specialists in particular groups, so far as concerns the designation of neotypes for species belonging to those groups. It cannot however be hoped that in every case there will be unanimity among workers on applications for the designation of neotypes for species belonging to the groups in which those workers are specialists. To meet this contingency, the scheme will need to include a provision empowering the Commission, in cases where opinion among interested specialists is divided, to take whatever decision may appear to it, in the light of the information given in the application and elicited in the subsequent prescribed consultations, to be best calculated to promote uniformity and stability in the specific nomenclature of the group concerned.

24. Unofficial " neotypes " established by individual specialists prior to the recognition in the " Règles " of this category of type specimen: That a decision on the question of the conditions in which neotypes can legitimately be established is already overdue is shown by the fact that already many specialists (both neontologists and palaeontologists) working in various groups of the Animal Kingdom have published papers in which they have specified individual specimens as " neotypes " of the species on which they were working. The specimens so specified have no doubt been labelled as " neotypes " in the collections in which they are deposited. The existence of these privately selected unofficial " neotypes " will no doubt be a cause of some embarrassment in the period immediately following the official recognition in the *Règles* of the concept of neotypes. No doubt in many cases the specimens unofficially selected as " neotypes " in this way satisfy all the requirements needed for the selection of a specimen for designation as an official neotype under the scheme now suggested; it may be expected therefore that many of these unofficial " neotypes " will be granted the status of an official neotype

after the new scheme has been introduced. In any case account should be taken of such unofficial "neotypes" wherever one has been selected in respect of a species for which, after the introduction of the scheme, it is proposed that an official neotype should be established. It must be expected however that some at least of these unofficial "neotypes" will fail to secure the approval of interested specialists, while certainly in many cases unofficial "neotypes" have been established unnecessarily, such specimens amounting to little more than well-described topotypical specimens. It is clearly desirable that everything possible should be done to prevent confusion from arising between these unofficial "neotypes", which possess no status in nomenclature, and neotypes officially established under the *Règles* after the introduction of the new scheme. It is not easy however to suggest means for securing this object. One course would be to adopt in the *Règles* some new term to denote the concept at present denoted by the word "neotype", for this would at once draw a sharp distinction between specimens officially recognised under the *Règles* as belonging to this category and those specimens already unofficially styled as "neotypes". It seems likely however that the expression "neotype" has now become so well known and is so deeply embedded in the literature that the general feeling among specialists would be against dropping it in favour of some newly-coined expression; this is a question on which the views of specialists would be especially welcome. If it is felt that it would not be practicable to substitute some new expression for the expression "neotype", it would still be possible to distinguish officially recognised neotypes from unofficially established "neotypes", by assigning to the former a number in some specially established series, such as "ICZN/1", "ICZN/2", etc., these numbers being used in the entry regarding the name in question in the *Official List of Specific Trivial Names in Zoology* and being affixed also to the specimen concerned.

(b) Questions upon which the advice of specialists is now sought

25. The question whether the concept of a "neotype" as a category of type specimen is to be recognised in the *Règles* will, under the decision taken by the Thirteenth International Congress of Zoology, Paris, 1948, be brought forward at Copenhagen in 1953 for decision by the Fourteenth International Congress. The present question differs from most of the others to be considered by that Congress in two important respects: First, it is concerned with a problem on which no provisions of any kind exist at present in the *Règles* and is therefore one which, from the point of view of the *Règles*, breaks entirely new ground. Second, this is a question on which considerations of practical utility and the need for preventing defects in the *Règles* from acting as a break on zoological and palaeontological work have led many specialists in widely diverse fields of the Animal Kingdom to anticipate the reform of the *Règles* in this matter; for already many workers have accepted the principle of neotypes and large numbers of unofficial neotypes have in fact been designated and are commonly recognised. The first question which the Copenhagen Congress will need to decide is therefore whether the existing *de facto* acceptance of the neotype concept is to be regularised by *de jure* recognition in the *Règles*, or, alternatively, whether an attempt is to be made to set back the hands of the clock in this matter by a blunt refusal to accord any recognition to neotypes.

If the decision at Copenhagen is in favour of recognising the neotype concept, immediate consideration will then need to be given to the circumstances in which the designation of neotypes is to be permitted, the safeguards which it will be necessary to impose and the machinery to be adopted for ensuring that the new provisions are duly observed. These are all matters of great practical importance and in many cases the decisions to be taken will necessarily be interdependent if a coherent and workable plan is to be devised. It is for this reason that in the present paper I have devoted considerable attention to these questions and have suggested provisions which appear to be not only the most appropriate in each case but also the provisions best calculated to serve as parts of a single co-ordinated plan. As the next step, I am most anxious to obtain from as many specialists as possible their views both on the outline of a plan for the recognition of the neotype principle which I have drawn up in the present paper and on the individual provisions which I have suggested should be included in it. The questions on which the advice of specialists is now sought are therefore : (1) Are you in favour of the recognition in the *Règles* of the concept of neotypes as a category of type specimen? (2) If you are in favour of such recognition, what are your views on the draft plan now submitted for discussion and on each of its component parts? (3) Are there any questions that are not dealt with in the draft plan on which you consider that provisions should be inserted in the *Règles* if the neotype principle is to be adopted and, if so, what are these questions and how do you suggest that they should be dealt with in the *Règles*?

**ON THE MEANS TO BE FOUND FOR PROMOTING THE
GREATEST POSSIBLE STABILITY IN ZOOLOGICAL
NOMENCLATURE : AN APPEAL TO ZOOLOGISTS FOR
ADVICE**

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(Commission's reference Z.N.(S.)359)

(For the decision by the Thirteenth International Congress of Zoology
that an investigation should be made in regard to this subject, see 1950,
Bull. zool. Nomencl. **4** : 234)

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Preliminary considerations

1. Introductory : The present paper—the seventh and last of the present series—is concerned with the means to be found for promoting the greatest possible stability in zoological nomenclature. At its Session held in Paris in 1948 the International Commission on Zoological Nomenclature submitted to the Thirteenth International Congress of Zoology a number of measures designed to promote stability in zoological nomenclature. These proposals were approved by the Congress, but, in supporting these proposals, the Section on Nomenclature made it clear that it attached the highest importance to the adoption of measures which would effectively put a stop to the constant changing of names—especially well-known names—on narrow technical grounds of a nomenclatorial character, and was not satisfied that the measures suggested by the Commission were sufficiently bold and constructive to secure the desired end. It was only with some reluctance that the Section on Nomenclature accepted the advice of the International Commission that the action then to be taken should be confined to the matters on which the Commission had itself submitted proposals. In accepting this course, the Section on Nomenclature stipulated that the whole question of how best to promote stability in zoological nomenclature should form the subject of a thorough investigation after the close of the Congress with a view to definitive action being taken by the next (Copenhagen) Congress in 1953. The Congress accordingly invited me, as Secretary to the International Commission on Zoological Nomenclature, to undertake the desired investigation, in consultation with interested specialists, with a view to the submission of a comprehensive Report, with recommendations, for consideration by the Fourteenth International Congress of Zoology when it should meet in Copenhagen in 1953.

2. Widespread desire for greater stability in zoological nomenclature : It is evident not only from the proceedings at the Paris Congress and from those of the International Geological Congress held in London later in the same year, of the International Ornithological Congress held at Uppsala in 1950, and of the International Entomological Congress held at Amsterdam in 1951 but also from the large number of communications which I have received from individual zoologists and palaeontologists since the Paris Congress that the old system of name-changing as a means for securing ultimate stability now finds few supporters and that there is a strong and widespread desire that positive measures should be devised for protecting names in current use from attack and so for securing an immediate advance towards the attainment of stability in zoological nomenclature. Alike in its general scope and in the degree of interest evinced both by specialists in systematic zoology and palaeontology and by workers in the field of applied biology, this question far outstrips in importance every other which today calls for consideration by all who are interested in the orderly development of zoological nomenclature. The very importance of this subject and the fact that every worker will be affected by whatever decisions may be taken makes it doubly necessary that the closest consideration should be given to the issues involved before decisions are taken by the Copenhagen Congress. For it is not enough that there should be an all but unanimous desire that steps should at once be taken to relegate

the changing of names on bibliographical and other technical grounds to the limbo of the past. What is required is that before the Copenhagen Congress there should be as frank as possible an exchange of views among workers of all shades of opinion and in every field as to the best measures to adopt to secure the desired end.

3. Two possible roads of advance : Broadly speaking, the question which has to be considered by all those zoologists who are dissatisfied with the present state of affairs and are anxious to secure greater stability in nomenclature is whether that end can best be secured by the adoption of novel and unaccustomed expedients or whether on the other hand the desired objective could be better achieved by an expansion and development of existing techniques, supplemented, where necessary, by provisions for dealing with problems which give rise to instability in nomenclature in cases where those problems are not at present dealt with at all in the *Règles*. The adoption of new expedients offers great attractions to many enthusiasts, not only as offering hope of rapidly securing increased stability but also as marking a definite break with traditions and practices which had so conspicuously failed to provide a stable nomenclature. On the other hand, many will feel—and it is certainly my view—that serious dangers may be incurred by the introduction, into a long established system, of provisions fundamentally different from those hitherto in force, unless the new provisions are most carefully thought out in advance. Even so, there must always remain the risk that, once such a change was made, serious difficulties might arise which it had been impossible to foresee and for which it would be difficult later to make adequate provision. In a matter of such importance as the present it is particularly necessary that the most careful consideration should be given to the relative advantages likely to be obtained on the one hand by novel provisions having as their aim the provision of, as it were, a short cut to the desired goal, and, on the other hand, by amplifications and extensions of the existing system designed to reach the same goal by following an evolutionary path. These two broad alternatives are discussed separately in the following paragraphs.

PART 1. THE INTRODUCTION OF A "LAW OF PRESCRIPTION" VIEWED AS A POSSIBLE MEANS FOR OBTAINING A STABLE SYSTEM OF ZOOLOGICAL NOMENCLATURE

4. **Proposals advanced in Paris (1948) and at Amsterdam (1951) in favour of the incorporation in the "Règles" of a "Law of Prescription" as a means for securing greater stability in zoological nomenclature:** The strong general desire among zoologists that means must be found to put an end to the constant changing of the names of animals found expression at the Thirteenth International Congress of Zoology held in Paris in 1948 in two independently sponsored proposals, each aiming at securing this object. The first of these was brought before the Congress by Dr. Henning Lemche (Copenhagen) on behalf of a large and representative group of Scandinavian zoologists (1950, *Bull. zool. Nomencl.* **3**: 159-161), the second, by Professor Pierre Bonnet (Toulouse) (1950, *Bull. zool. Nomencl.* **3**: 177). The general purport of each of these proposals was that there should be established a "Law of Prescription" which would curb the full rigour of the Law of Priority in relation to old long-neglected names not in current use. Under the Scandinavian proposal a generic name or a trivial name published prior to 1850 but not used by any subsequent author from the beginning of that year until the present time would be rejected under a Law of Prescription; it was further suggested in that proposal that such a genus or species should be known by whatever name had been in general use for it since the beginning of 1850. The French proposal was somewhat less precise in its scope and was to the effect that, under a Law of Prescription which it was proposed should be established, no generic name or trivial name which had remained overlooked for many years should, on the grounds of priority, be substituted for a generic name or a trivial name which had been in general use for a long time; it was further suggested that disputed questions should be settled by specialists. The same general desire was expressed in the proposal placed before the Ninth International Congress of Entomology held at Amsterdam in August, 1951, by M. Ch. Ferrière of Geneva, who also proposed that a Law of Prescription should be incorporated into the *Règles*. Under this Swiss proposal no specific date would be adopted as the dividing line which would separate those names to which the Law of Prescription would apply from those to which it would not. Under this proposal any name (1) which had been published for a period of 100 years and during that period had never been used by any author other than that by which it had been originally published, and (2) of which the original type material was no longer extant would automatically lose its rights under the Law of Priority. M. Ferrière contemplated also the possibility that, where a name had not been used for a period of 100 years but the original type material on which the nominal species so named was based had nevertheless been preserved, the name in question should not acquire any rights under the Law of Priority until the species in question had been adequately re-described. As regards this latter suggestion M. Ferrière recognised that the critical issue to be determined was the date as from which the trivial name of a nominal species so re-described should rank for the purposes of the Law of Priority. If, for example, the name in question had been first published

in (say) 1767 and it had been republished in the manner proposed (i.e. with an adequate description and in combination with the name of the genus to which the species in question was currently believed to belong) in (say) 1951, should that trivial name rank for the purposes of priority as from 1767 or as from 1951? All that M. Ferrière felt able to suggest on this question was that it was one which would require further discussion.

5. Questions to be weighed in determining whether it is desirable to recognise a "Law of Prescription": The three proposals described in the preceding paragraph were all of a preliminary and tentative character, and none is sufficiently precise in all essential respects to provide a basis on which a clear-cut mandatory provision could be prepared for insertion in the *Règles*. Nevertheless, each of these proposals clearly envisages the inclusion in the *Règles* of a provision which, in the interest of nomenclatorial stability, would deprive of availability old names which for a hundred years or more had been entirely overlooked, the resuscitation of which could not fail to lead to confusion and objectionable (because, from a practical point of view, unnecessary) name-changing. Everyone, probably, who is interested in securing a stable nomenclature has at one time or another wished that the *Règles* contained some provision of this sort. What is necessary now is therefore to consider whether the introduction of a Law of Prescription of this kind (1) is practicable, and (2) if practicable, would afford the best means of attaining the end desired.

6. Question whether it would be practicable to devise a workable "Law of Prescription": If we take first the question of practicability, all must, I think, agree that, subject to one essential condition, it would be practicable to include in the *Règles* a provision under which a new law—the Law of Prescription—would in certain cases overrule the Law of Priority, thereby conferring availability upon some name published for a given taxonomic unit, even though that name was not the oldest validly published name for that taxonomic unit. The condition which it would be absolutely essential to satisfy in drafting any such provision would be that the terms of that provision were absolutely unequivocal and left no room for subjective judgment. For example, it would be essential to specify categorically the period which it would be necessary to establish as the period during which the name in question had either (1) never been used or (2) had been used only on a small number of occasions, the number so selected being specified in the provision to be inserted in the *Règles*. A definite provision of this kind is one which would in all circumstances convey the same meaning to every reader, and in this sense could properly be regarded as one which it would be practicable to include in the *Règles*. If however the provision were to say that the Law of Prescription applied to any name which had not been used for many years (or "durant de nombreuses années") instead of specifying precisely the number of years to be accepted for this purpose, that provision would be wholly unworkable and its adoption would be open to the strongest possible objection; for the subjective element introduced by the expression "many" in relation to the word "years" would introduce a serious ambiguity; for a period of years which seemed one of "many years" to one worker would not seem

so to every other worker. Accordingly, with a provision so worded it would be impossible to ensure its uniform application by all workers.

7. The weakness of any Law of Prescription arising from the negative character of the test imposed: We have seen in the preceding paragraph that an Article which laid down in clear and precise terms the circumstances in which a Law of Prescription should apply to names would be a practicable provision to incorporate into the *Règles*. We have next to consider whether such an Article would be well calculated to serve the ends for which it was designed. Here we encounter a serious difficulty arising out of the negative character of the test imposed by a Law of Prescription. As is well known, it is virtually impossible to establish a negative proposition on an absolutely unbreakable foundation, for however great the care taken to examine the various possibilities which arise in any given case, it can hardly ever be asserted with absolute confidence that without exception every possibility has been foreseen and its results examined. Accordingly, while it is often practicable, by dint of a great deal of work, to establish that a given negative proposition possesses a high degree of probability, it is hardly ever possible to carry the process one stage further and to establish that such a proposition is unquestionably true. If, for example, there were to be established a Law of Prescription which applied to every name which, throughout the first 100 years following its publication, was used by no one but its original author when publishing the name, it would be necessary to examine the whole of the known literature of the century in question. Great practical difficulties would be involved in any such effort owing to the extremely small number of centres possessing virtually complete scientific libraries, but quite apart from this it would never be possible to reach a stage beyond a point at which it could be affirmed that there was a very degree of probability that the name concerned had never been used during the century in question. For it is never possible to make sure beyond question that every book dealing with the subject has been examined. Until recently, for example, almost every zoologist would have been prepared to subscribe to the view that every published work by Linnaeus was known and had been carefully examined and that in consequence there was no risk at the present time of new Linnean names being brought to light. Nevertheless, every zoologist who subscribed to this view would have been wrong, for recently there has been discovered a small pamphlet published in 1776 containing the names bestowed by Linnaeus on the mammals, birds, fishes and insects figured in George Edwards' *Natural History* published in the period 1743-1751, many of the names concerned being names then published for the first time. We must conclude therefore that a provision establishing a Law of Prescription which relied upon the establishment of the negative proposition that a given name was never used in the literature during some specified period would be subject to the serious disadvantage that it would never be possible to establish such a proposition with absolute certainty; accordingly, it would never be possible to be certain whether or not the Law of Prescription applied to any given name. Moreover, even to establish that such a proposition possessed a high degree of probability would involve devoting a great amount of time and industry to the essentially barren task of searching the old literature of any given group. It appears to me

therefore that, while a precisely worded provision embodying a Law of Prescription must be regarded as constituting a practicable provision, it would nevertheless be open to the serious disadvantages both that from the negative character of the test imposed it would never be possible to be absolutely certain that that Law was applicable in any given case and further that even to establish that there was a high degree of probability that that Law did so apply would involve a great deal of time-consuming bibliographical investigation, involving a most wasteful diversion of effort from genuine zoological studies. For these reasons I suggest that, while the possibility of proceeding by way of establishing a Law of Prescription should not at this stage be discarded, the possibility of finding as good a method of promoting stability in zoological nomenclature as that afforded by the Law of Prescription but one which was not open to the disadvantages described above should be most carefully examined.

**PART 2. THE POSSIBILITY OF OBTAINING A STABLE
SYSTEM OF ZOOLOGICAL NOMENCLATURE BY
MEANS OF AMPLIFICATIONS, CLARIFICATIONS AND
EXTENSIONS EFFECTED WITHIN THE EXISTING
FRAMEWORK OF THE "RÈGLES" AND BY THE
MORE EXTENDED USE OF EXISTING PROVISIONS
FOR STABILISING INDIVIDUAL NAMES**

8. Twofold manner in which stability in zoological nomenclature might be obtained within the general framework of the existing "Règles": Having postponed for the time being the further consideration of the merits of the proposed recognition in the *Règles* of a "Law of Prescription," we must now turn to consider the practicability of obtaining the desired stability in nomenclature by means of amplifications, clarifications and extensions effected within the general framework of the existing *Règles*. Broadly speaking, there are two principal ways by which nomenclatorial stability could be sought along these lines. The first is represented by a systematic and sustained effort to improve the *Règles* by eliminating obscurities and by amplifying existing provisions when these are found to be incomplete or otherwise inadequate. The second is to be found in a determined drive greatly to increase the number of names afforded an unassailable position through being placed upon the *Official Lists*. The first of these methods was pursued a considerable distance by the Thirteenth International Congress of Zoology at its meeting held in Paris in 1948, but, as that Congress itself recognised, much still remains to be done. For this is not a matter on which

any relaxation of effort (such as that which occurred between 1901 and 1948) should be permitted. What is required is that a constant watch should be kept for difficulties which may arise in the application of the *Règles*; wherever a problem arises for which an unequivocal answer cannot be obtained from the *Règles*, that problem should at once be referred to the International Commission on Zoological Nomenclature, so that that body can formulate, in consultation with specialists, a satisfactory solution of the particular difficulty concerned and thereby, with the approval of the next following Congress, provide, so far as that particular problem is concerned, a means for eliminating doubt not only in the particular case submitted but also in all similar cases which may later arise. But this method of advance, extremely valuable though it is, cannot achieve that stability for individual names which it is the desire of the great majority of present-day zoologists to secure and which is the only contribution asked for from zoological nomenclature by teachers of zoology and by workers in the applied fields of biological endeavour. In this field also important advances were made by the Paris Congress in 1948, but much still remains to be done. These parallel but quite distinct methods of promoting stability within the general framework of the existing *Règles* are considered separately below.

(a) The promotion of nomenclatorial stability through the amplification, clarification and extension of the "Règles"

9. Contributions towards the stabilisation of zoological nomenclature to be obtained from general and particular provisions in the "Règles" respectively: The bulk of the provisions in the *Règles* are of a general character but a few relate particularly to the procedure to be followed for linking particular names to particular species. Each of these classes of provision is capable of making a contribution towards the attainment of stability in zoological nomenclature. The nature of that contribution differs greatly, and it will be convenient to consider these two groups of provisions separately.

(i) The contribution towards the stabilisation of zoological nomenclature obtainable through the amplification and clarification of the general provisions of the "Règles"

10. Directions in which the amplification and clarification of the general provisions in the "Règles" could contribute towards the stabilisation of zoological nomenclature: If we look first at the general provisions in the *Règles* as a whole, we are immediately struck by the total lack of any provision for the naming of Orders and higher taxonomic categories and the complete inadequacy of the existing provisions relating to the naming

of families and subordinate supra-generic categories. The first of these defects has been directly responsible for the present state of chaos in the nomenclature of Orders and higher categories; the second must take the blame for the state of confusion and uncertainty in which the nomenclature of families and sub-families is at present engulfed. In quite a different field also the existing provisions of the *Règles* are so unsatisfactory that instability and confusion in nomenclature is often inevitable, for the Article (Article 19) which purports to prescribe the circumstances in which defectively formed names (whether generic or trivial) are to be emended is itself so badly drafted that, far from introducing order in relation to this class of problem, that Article itself actively promotes confusion and uncertainty. These three problems are all of great importance, and stability and uniformity will be materially promoted when solutions are found for them. Fortunately, however, these matters need not detain us here, for as regards each of them the Thirteenth International Congress of Zoology at Paris in 1948 recognised that the existing situation was indefensible and decided that remedial action must be taken as soon as possible. The Congress did not itself forthwith amend the *Règles* in regard to these matters, for it considered that in each case the problems involved were so complex that the first step required was a thorough investigation of the issues involved. The Congress accordingly invited me, as Secretary to the International Commission on Zoological Nomenclature, to undertake such an investigation in regard to each of these matters in conjunction with interested specialists and, having done so, to submit a comprehensive Report on each, with recommendations, for consideration by the next (Fourteenth) International Congress of Zoology when it meets at Copenhagen in 1953. As regards each of these problems I have undertaken extensive preliminary discussions with interested specialists with a view to eliciting the problems upon which decisions will be needed and in each case a stage has now been reached when a general consultation can usefully be initiated with a view to ascertaining what is the general wish of zoologists as to the nature of the reforms to be instituted. Accordingly, for each of these subjects I have prepared—as part of the initial measures by way of preparation for the Copenhagen Congress—a general survey of the issues involved, to each of which I have added questions aiming at obtaining advice from specialists as to the action which it is desirable that the Copenhagen Congress should take. These surveys have now been published in the present volume (Vol. 7) of the *Bulletin of Zoological Nomenclature* as follows: (1) the emendation of names, pp. 4-60; (2) family names and names of allied categories, pp. 61-94; (3) Ordinal Names and Names of Higher Taxonomic Categories, pp. 95-118. The attention of all workers interested in the promotion of nomenclatorial stability is particularly drawn to the foregoing papers, and it is very much hoped that all such workers will respond to the request made in those papers for advice as to the action which can most profitably be taken on the various issues there discussed. For the purposes of the present examination of the problem of the measures which should be taken to promote stability and uniformity in zoological nomenclature, we may take it that, as the result of the initiative shown by the Paris Congress, measures are already in hand which should serve to enable the Copenhagen Congress to devise satisfactory measures for promoting stability in the three fields of nomenclature discussed above. We may, therefore, now turn to

consider in what other directions the introduction of amplifications and clarification of the existing provisions of the *Règles* can be called in aid of the objective with which we are concerned. From the suggestions which have been received from specialists and from the consideration which I have myself given to this subject there are, it seems to me, at least half a dozen ways in which it would be possible to strengthen the *Règles* as an instrument for the promotion of stability and uniformity in nomenclature. These are discussed in the following paragraphs.

11. Suggested addition of a Sub-Title or Preamble to the "Règles" defining the purposes for which zoological nomenclature has been established: It is a common practice for sets of rules devised for some particular end not merely to be given some appropriately informative title but also for that title to be followed either by some explanatory sub-title or for the rules themselves to be prefaced by a Preamble setting out the purposes for which the rules in question have been adopted. The *Règles* governing zoological nomenclature contain neither such a sub-title nor such a Preamble. Accordingly, there is nothing to show what are the general purposes for which the rules of zoological nomenclature have been established. It has been suggested that it would be helpful if this omission were to be rectified by the addition of words, either in the form of a sub-title or (perhaps more appropriately) as a Preamble introducing and in a sense governing the entire Code, making clear the purposes for which rules of zoological nomenclature have been established, including in particular the purpose of providing a uniform and stable system for the naming of animals. Such a Preamble would naturally state that zoological nomenclature has been established by the zoologists of the world for the twofold purpose, first, of providing a system for the naming of taxonomic units, both Recent and Fossil, belonging to the several taxonomic categories recognised in the classification of animals, and, second, for the purpose of ensuring that every species shall always be known by the same name and that that name shall never be used for any but that species, thereby establishing and promoting uniformity and stability in the names of animals, rendering possible the free interchange, between workers of every nation and of every language, of knowledge acquired in regard to animals, and, by this means, making a positive contribution to the acquisition and dissemination of knowledge in regard to zoology.

12. Suggested rewording of the plenary powers provisions for the purpose of making it clear that the object of those powers is to promote uniformity and stability in zoological nomenclature: In the form in which the Commission's plenary powers were amended by the Paris Congress of 1948, at the time when those powers were formally incorporated into the body of the *Règles*, those powers are quite sufficient to enable the Commission to promote, subject to the safeguards imposed, the policy of securing the uniformity and stability which all zoologists have at heart. It has been suggested, however, that it is desirable that the phraseology used in the plenary powers Article of the *Règles* which was lifted almost intact from the resolution adopted by the Monaco Congress of 1913 should be revised in order to bring it into harmony with current ideas and current needs. The

Plenary Powers Resolution of 1913 represented a victory by those zoologists, the great majority at that Congress, who were aghast at the changes caused by the unqualified application of the Law of Priority agreed upon at Berlin in 1901, over the more conservative school of zoologists who were then strongly entrenched in the membership of the Commission. The majority, having succeeded in carrying their main point—the need in certain cases to curb the full force of the Law of Priority—very wisely did not press their advantage too rigorously; hence it is that the Plenary Powers Resolution, which was drafted by the Commission when it decided to bow to the general will of the zoologists present at the Monaco Congress, bore, and the Article in the *Règles* in which that Resolution has now been incorporated still bears, unmistakable evidence of the reluctance of its authors to recognise the need for placing any restriction upon the Law of Priority. The suggestion that has been made is that the expression “greater confusion than uniformity” which for the foregoing reasons found its way into the Resolution as originally drafted in 1913 should be replaced with a more appropriate condition and one more in harmony with current ideas. It has accordingly been suggested that, as part of any general plan for the promotion of stability in nomenclature, the plenary powers provision should be reworded by the omission of the phrase quoted above, there being inserted in its place a condition that the plenary powers are for use where, in the judgment of the Commission, the use of those powers is clearly necessary for the purpose of promoting stability and uniformity in zoological nomenclature.

13. The removal of obscurities, and the filling-in of gaps, in the “*Règles*” as a method of promoting uniformity and stability in zoological nomenclature: One of the most potent causes of instability in nomenclature in the past has been the grave doubts as to the meaning to be attached to particular provisions in the *Règles* (for example, the meaning to be attached to the expression “nomenclature binaire” as used in Article 25), these doubts having inevitably led to differences of interpretation and consequently to lack of uniformity. Another equally potent cause of instability and divergence of nomenclatorial practice has been the total lack of provision in the *Règles* in regard to whole topics, such as the treatment to be accorded to names bestowed upon infra-subspecific forms. Many of the obscurities which formerly marred the *Règles* were removed by the Paris Congress in 1948 when also many gaps in the *Règles* were filled in. While, therefore, much progress in this field was made by the Paris Congress, it would be unreasonable not to expect that there still remain obscurities and omissions which, until remedied, will continue to lead to differences of interpretation and practice and therefore to instability in zoological nomenclature. It is, therefore, of great importance that, whenever a worker encounters a problem for which there is either no provision or no clear provision in the *Règles* he should at once bring that problem to the attention of the International Commission, so that that body may formulate recommendations for dealing with the question concerned, for submission to the next Congress. Within the fields concerned, the settlement in this way of outstanding problems may be expected to make a valuable contribution to the furtherance of uniformity and stability in nomenclature.

14. The need for avoiding unnecessary changes in names when any amendment is made in the "Règles" or an addition is made thereto :

For the reasons just explained it is important at times either to clarify some provision in the *Règles* in order to promote uniformity and consequently stability by ensuring that in relation to any given problem there shall be clear guidance as to the procedure to be followed. When such clarifications are effected, it is important at the same time to pay regard to the fact that, prior to the introduction of the clarification concerned, specialists will have dealt with the problem in one way when dealing with one name but in other ways when dealing with other names. If the very improvement so introduced is not itself to give rise to undesirable name-changing in cases where hitherto mutually inconsistent principles had been applied in dealing with the problem concerned in relation to different names, it is essential that provision should be made in the *Règles* for the grant of exceptions to the new provision where its application would lead to the changing of particular names. Naturally, any cases of this kind can always be dealt with satisfactorily under the plenary powers, but it is important that it should be made clear that it is the purpose of the *Règles* that such exceptions should be made in all cases where they are required if unnecessary changing of names is to be avoided ; for this purpose it is desirable that the amended Article should contain an express provision that any case where that Article would lead to the changing of existing nomenclatorial practice should be submitted to the Commission for the purpose of enabling that body to consider whether in the interests of uniformity and stability an exception to the amended Article should be authorised in that case. In some instances where an existing provision in the *Règles* was clarified by the Paris Congress a provision of this kind was inserted, but this was not done in every case, nor was it made clear that the foregoing was a principle of general application, having as its object the avoidance of changes in nomenclatorial practice whenever the meaning of a given Article in the *Règles* is clarified. It will, I think, be generally agreed that the principle set forth above applies with at least as great strength, if not with greater strength when we are concerned not with the clarification of some provision in the *Règles* but with the actual amendment of such a provision. Here again a supplementary provision of the kind suggested above was adopted by the Paris Congress in some instances, e.g. when the Congress amended the provision relating to the rights of a first reviser in determining the relative priority to be accorded to two or more names published for the same species in the same book (1950, *Bull. zool. Nomencl.* **4** : 330), but this was not done consistently in every case as a matter of set purpose. It will, however, be generally agreed (I think) that the insertion of such a provision is desirable in every case where an existing provision of the *Règles* is modified. Somewhat similar considerations arise when the change made in the *Règles* is not the clarification or amendment of some existing provision but the insertion of a provision regulating some matter not previously dealt with. In such cases it will normally be desirable, in the interest of stability, to lay down less rigorous standards for application to names published, or to action taken, prior to the introduction of the new provision than those to be prescribed for application after that date. In addition, it will commonly be desirable to make provision for exceptions, in the interests of stability, similar to those suggested above for cases where an existing provision in the *Règles* is clarified or amended.

15. Importance, in the interest of securing stability, of obtaining supplementary decisions in relation to particular cases, consequent upon the clarification of the "Règles" in certain instances: proposed establishment of an "Official Index of Rejected and Invalid Books in Zoology": As regards the greater part of the provisions included in the *Règles*, the adoption by the Congress of decisions clarifying the meaning of, or amending, the provisions concerned may, as explained above, give rise to the need for the grant of exceptions in certain cases, but will not of themselves call for supplementary decisions of a more general character. The position is different however when we come to consider the position which arises when some portion of the provisions relating to the Law of Priority are affected; for here, at least in some instances, it may be necessary, when an amendment is adopted by the Congress (even in the clearest possible terms) for additional decisions to be obtained from the Commission as to the application of that decision in particular cases, if the object for which that amendment was made, namely the promotion of uniformity and stability, is to be attained. A good example of this class of case is provided by the decision of the Paris Congress that the expression "nomenclature binaire" till then used in Article 25 had the same meaning as the expression "nomenclature binominale" (1950, *Bull. zool. Nomencl.* 4: 65); this decision was perfectly explicit but nevertheless it is necessary in the case of many books published in the XVIIIth century to obtain an express decision from the Commission on the question whether or not the author in that book consistently applied the principles of binominal nomenclature, as required by Article 25, as amended by the Paris Congress. The number of books in respect of the status of which there is sufficient doubt to make it necessary to obtain a supplementary decision of this kind is considerable. The extent to which names published in these books have been employed varies greatly, ranging from cases where the majority of the new names concerned have been used, although the book in question was clearly not written by an author who accepted the principles of binominal nomenclature to cases where, although the book possesses very strong claims to be regarded as a binominal work, all or most of the new names in it have been rejected by the majority of authors. It cannot be questioned that at least in some groups the present indeterminate status of books of this class represents one of the most serious remaining threats to stability in the nomenclature of the groups concerned. It is extremely important therefore in the interests of stability that the status of books of this class should be determined with as little delay as possible, now that the Congress has reached a decision on the underlying question of principle involved: in each case two questions will call for decision: first, whether in the book concerned the author concerned applied the principles of binominal nomenclature, second, irrespective of the answer given to the foregoing question, whether the rejection or, alternatively, the acceptance of the book for nomenclatorial purposes would be calculated to promote or to disturb uniformity and stability in nomenclatorial usage. According to the answers given to the second of these questions, it may be found desirable in some cases to use the plenary powers either to validate or to suppress the book concerned or some of the names first published in it. Although, as will be appreciated, the settlement of the status of names as published in books of the class discussed above will make an important con-

tribution towards obtaining uniformity and stability in nomenclature, it is not a matter which can be directly furthered by the insertion of any additional provision in the *Règles*. The machinery is available through the powers conferred on the International Commission by the Congress, and it is therefore for specialists to make use of that machinery. The Paris Congress recognised the importance of placing on record in the most formal and authoritative way all decisions taken by the International Commission on individual cases, both when those decisions were taken under its plenary powers (1950, *Bull. zool. Nomencl.* **4** : 65, 332) or under its judicial and interpretative functions (1950, *ibid.* **4** : 261, 333). It accordingly decided that all such decisions should be recorded in special Schedules annexed to the *Règles* and should thus become an integral part of the international system of zoological nomenclature. The only disadvantage of this arrangement, so far as concerns the availability of individual books, is that under it the titles of books which were suppressed by the Commission under its plenary powers would be recorded in one Schedule, while the titles of works which were found to be invalid by the Commission acting in its judicial capacity would be recorded in a different Schedule. It would clearly be more convenient to zoologists if the titles of all rejected works were to be recorded together. I believe therefore that the following suggestion made by Dr. Ernst Mayr (*American Museum of Natural History, New York*) (*in litt.*, 31st October, 1951) will be warmly welcomed : " It occurs to me that it would be most useful to zoologists if the Commission would initiate a list of rejected publications, that is, publications, the names in which are not available for nomenclatorial purposes." The adoption of the course suggested by Dr. Mayr would, I consider, represent a definite improvement on the procedure agreed upon in this matter by the Paris Congress. I accordingly suggest : (1) the decisions cited above taken by the Paris Congress in relation to the recording of decisions by the Commission, under which a given book is either suppressed under the plenary powers or declared by the Commission to be unavailable under the *Règles* should be revoked and (2) that, in place of the provisions so revoked, the following new provisions should be enacted : (a) an Article to be added to the *Règles* establishing an " Official Index of Rejected and Invalid Books in Zoology " ; (b) words to be added to the Article defining the powers and responsibilities of the International Commission making it the duty of that body to inscribe on the foregoing *Official Index* the title of every book or paper relating to zoology which it may either (i) suppress for nomenclatorial purposes under its plenary powers or (ii) declare in its judicial capacity to be objectively unavailable under the *Règles*, together with particulars of the name of the author of the book or paper concerned, and the date on which it was published ; (c) an additional Schedule to be annexed to the *Règles* for the reception of the proposed " Official Index."

16. Need for the elimination, in the interests of uniformity and stability, of generic names of indeterminate application : As every systematist is aware, one of the most serious threats to uniformity and stability in nomenclature is the danger to be apprehended from names of indeterminate application, for, until, by means of the processes prescribed by the *Règles* a precise content is given to the concept (whether at the genus level or at the species level) represented by a given name, that name must be regarded as a

potential danger to the nomenclature of the group concerned. The problems here involved in the case of generic names are somewhat different from those in regard to specific trivial names, and they are on the whole less serious in the sense that in every case it is possible under the *Règles* to ascertain precisely how a generic name should be applied, while this is not so in the case of specific trivial names. We may therefore conveniently consider first the present problem as it arises in connection with generic names. In every group which has not been subjected to a thorough nomenclatorial revision in the light of the provisions in the *Règles* there exist nomenclatorially available generic names—in many cases of great age and therefore of high priority—for which no type species has been determined. The provisions (Article 30) in the *Règles* to which recourse has to be had for determining the type species of any given nominal genus are such that in the great majority of cases it has always been possible to obtain an absolutely conclusive answer in this matter, while the Paris Congress provided clarifications on the three aspects of those provisions on which previously there had been serious doubt (namely, (a) the nominal species to be treated as originally included species in cases where, in addition to placing certain nominal species in the genus in question, the original author cited also the name of one or more other previously established nominal species as synonyms of the species which he referred to the genus; (b) the nominal species to be treated as eligible for selection as the type species of a nominal genus originally established without any nominal species being expressly cited; (c) the species to be accepted as the type species of a nominal genus in cases where such a genus was established on the basis of an erroneously determined type species). It is therefore now possible to determine with a high degree of precision what nominal species is the type species of any given nominal genus. Accordingly, there is now no reason why the content of any nominal genus should be allowed to remain indeterminate. It is highly important in the interests of nomenclatorial stability that in every group the identity of every nominal genus should be determined in the foregoing manner and in consequence the status of every generic name definitely settled. Experience acquired in connection with groups in which this process has been carried through shows that the determination of the type species of the nominal genera concerned will reveal a certain number of cases where some long-ignored name of high priority should, under the *Règles*, replace some well-known name in common use or worse still where the *Règles* require that some well-known nominal genus should take, as its type species, a species not regarded as congeneric with the species commonly accepted as the type species of that genus, it being necessary in consequence that that generic name should in future be used in a sense entirely different from that in which it is commonly applied. The situation which arises in such circumstances is often serious from the point of view of stability in generic nomenclature, but the problem is not one which calls for any addition to the *Règles*, for one of the main purposes for which plenary powers were granted to the Commission by the Congress was to enable it to nullify threats to stability arising in this way, and the powers so granted are quite sufficient to enable the Commission to discharge its duties in this behalf. There is however one situation in connection with generic nomenclature which calls for special consideration. This is where the nominal species correctly determined under Article 30 of the *Règles* as the type species of a nominal genus

is unrecognisable, that is, where it is impossible to identify, or to identify with certainty, the taxonomic species represented by that nominal species. In such a case the stabilisation of a generic name is not enhanced for practical purposes by the nominal genus so named having had its type species determined. For either (1) some specialists claim to recognise the nominal species and consequently use the generic name in question, while others do not, or (2) the generic name in question remains as a *nomen dubium* and thus constitutes a potential threat to the generic nomenclature of the group concerned, it always being open to later authors to claim to recognise the nominal species concerned and thus to lift the generic name in question out of its obscurity as a *nomen dubium* and to bring it into use in place of the name—possibly a very well-known name—currently used for the genus in question. There is also a third situation (3), where (as in the preceding cases) the type species of a well-known nominal genus is unrecognisable—and that nominal genus is in consequence indeterminate—but where in view of the importance of the generic name in question specialists have deliberately ignored the fact that the nominal genus in question was indeterminate and have continued to use the generic name in question on the tacit—but nomenclatorially quite unjustifiable—assumption that, whatever might be the taxonomic species on which the original author founded the nominal species which is the type species of the genus, that taxonomic species must have been congeneric with the species commonly treated today as belonging to that genus. An example of this class of case is provided by the nominal genus *Lumbricus* Linnaeus, 1758, where, although the nominal species (*Lumbricus terrestris* Linnaeus, 1758), which is the type species of that genus, is unrecognisable, the generic name *Lumbricus* has been retained in use on the assumption that, whatever may have been the species to which Linnaeus gave the trivial name *terrestris*, that species must have been one of the species currently referred to the genus *Lumbricus*. As long as this class of case is allowed to continue, the generic names concerned are clearly in a highly unstable and unsatisfactory condition. Every such case—when concerned with an important name—should certainly be settled in whatever way the specialists concerned may consider to be the most appropriate way; no addition to the *Règles* is however required for this purpose, for a definite decision could be obtained from the Commission under its existing powers—though perhaps in some of these cases a more satisfactory solution might be obtained by the establishment of a neotype, if neotypes were to be granted official recognition (see paragraph 21 below). If no special action is called for in the case of generic names belonging to what I have called Class (3), it is quite otherwise when we turn back to consider the position of generic names belonging to Classes (1) and (2). Names belonging to Class (1) (names of genera, the type species of which are regarded by some specialists as recognisable but by others as unrecognisable) raise a question which is essentially indistinguishable from that raised at the species-name level by trivial names which are regarded as recognisable by some, but not all, authors; we may therefore leave this class of generic name for consideration in paragraph 18 below, where a suggestion is submitted for eliminating the instability and confusion which arises—and, failing the incorporation of appropriate provisions in the *Règles* are bound to continue indefinitely—when there is disagreement among specialists as to

whether the taxonomic species represented by a given nominal species is or is not recognisable. The position as regards generic names belonging to Class (2) (names of nominal genera having, as their respective type species, nominal species which specialists are agreed are unrecognisable) is entirely different. There is nothing whatever to be said in favour of the retention of availability by such generic names; their elimination cannot possibly cause the slightest inconvenience or disturbance, while their retention merely perpetuates a threat to nomenclature without serving any useful purpose whatever. It is accordingly suggested that there should be included in the *Règles* a provision requiring the International Commission on Zoological Nomenclature, on the application of specialists, to place on the *Index of Rejected and Invalid Generic Names in Zoology*, as a name rejected for the purposes of the Law of Priority but not for those of the Law of Homonymy, the generic name of any nominal genus, in respect of which, after the expiry of a period of six months (a) from the publication of the application in question in the *Bulletin of Zoological Nomenclature*, and (b) from the giving of public notice of the receipt of that application in like manner as though it were one involving the possible use of the plenary powers, the Commission is satisfied that, from the standpoint of the general body of workers in the group concerned, the generic name in question is a *nomen dubium*.

17. Need for the elimination, in the interests of uniformity and stability, of "nomina dubia" at the species-name level: We have seen that, except in one case—which we have reserved for later consideration—the *Règles* in their existing form are, subject to the addition suggested at the end of the preceding paragraph, adequate both to determine the identity of nominal genera by the determination of their type species and also to ensure that the process of such determination shall not give rise to confusing and objectionable changes in the use of generic names. When, however, we turn to consider the parallel problem presented by *nomina dubia* at the species-name level, we find a very different situation. Prior to the Paris Congress of 1948, the provisions in the *Règles* in relation to this problem were so incomplete and unsatisfactory that the number of cases where it was impossible definitely to identify the taxonomic species represented by the nominal species bearing a given trivial name was very large. The position was however greatly improved by the action of the Paris Congress (a) in giving express recognition to the concepts represented by holotypes, syntypes and lectotypes, and (b) in thoroughly revising Article 31. In consequence it is now often as readily possible objectively to identify the taxonomic species represented by a nominal species previously regarded as unidentifiable (the trivial name of which had therefore previously been regarded as *nomen dubium*) as it is to provide an objectively determinate application for a nominal genus, for which till then no type species had been ascertained (and of which therefore the name had up till then been regarded as *nomen dubium*). In many cases however (e.g. where the original type material has disappeared) it is impossible to provide a nominal species with an unchallengeable (because objective) identification, and in consequence the trivial name of that nominal species remains a *nomen dubium*. The names which fall into this class may be of two kinds: (1) names of nominal species which some specialists claim to be able to identify, but others are unable to

do so, (2) names of nominal species which no specialists claim to be able to recognise. Special consideration was given by the Commission and the Congress in Paris in 1948 to names falling in the first of these groups, it being considered necessary to make specific provision for dealing with this subject, in view of the strong objection (on the grounds both of uniformity and stability) to the use for a given species of different trivial names by different specialists, one of which was regarded by some of the specialists as a *nomen dubium*. In order to deal with this particular problem, the Paris Congress agreed to insert in the *Règles* a provision prescribing that in such a case the question at issue is to be referred to the Commission for decision (1950, *Bull. zool. Nomencl.* 4 : 76).

18. Suggested addition to the " Règles " of a provision for the suppression of specific " nomina dubia " in cases where specialists have been unable to provide a definite identification of the taxonomic species so named : In every group, as we all know from experience, there are nominal species so inadequately described that identification of the species concerned is considered by specialists to be impossible without reference to the original type material and of which the type material has disappeared or at least its present whereabouts is unknown. The specific trivial names of such nominal species represent *nomina dubia* of a peculiarly useless and objectionable kind : such names are useless because they do no more than clutter up catalogues with names which cannot be applied to any known species, and dangerous because it is always possible that by intensive bibliographical or similar study some zoologist, who is also an eminent authority on the history of zoology, may be able—at the cost of great labour—to bring forward unquestionable evidence in favour of the identification of nominal species for over a century regarded on all hands as unidentifiable, with the result that trivial names which have long slumbered in obscurity as worthless *nomina dubia* suddenly acquire the right under the Law of Priority to supercede the trivial names by which the species concerned are universally known. That this is no hypothetical risk is shown by the painful experience suffered only last year by ornithological nomenclature when, as the result of scholarly investigations of great ingenuity, Dr. Erwin Stresemann established beyond question the identity of the taxonomic species represented by a considerable number of nominal species published by Gmelin in 1789, the names of which by common accord among ornithologists had been treated as *nomina dubia* for no less than 161 years (1950, *Auk* 67 : 66-88). Dr. Stresemann expressed regret that under the *Règles* it was necessary to accept what he called his " excavated antiques " as the names of the species concerned, which had for so long been known by other names. At the same time Dr. Stresemann stated that in his view some at least of the changes involved " would be utterly confusing " and therefore that it was desirable that the Gmelin names concerned should be examined individually ; he added : " Quick action seems urgent." Proposals for dealing with this particular case have since been submitted to the International Commission by the Standing Committee on Ornithological Nomenclature established by the International Ornithological Congress held at Uppsala in July, 1950. This incident is however extremely relevant to the problem with which we are here concerned, for it illustrates in a most vivid fashion the dangerous threat to nomenclatorial stability represented by this class of specific *nomina*

dubia. Moreover, it was precisely for the purpose of rendering impossible the resuscitation of ancient names of unrecognised nominal species of this kind and the consequent discarding of well-known names continuously used for the species concerned for many decades or even (as in the example quoted) in some cases for over a century and a half that the introduction of a Law of Prescription limiting the application of the Law of Priority was proposed and strongly urged by Scandinavian and French zoologists at the International Congress of Zoology in Paris three years ago; it was with a similar object that at Amsterdam in 1951 the same proposal was urged upon the International Congress of Entomology by the eminent Swiss entomologist M. Ch. Ferrière. The protection of nomenclatorial practice from danger from this class of name represents without doubt the main object not only of all those zoologists who advocate the recognition in the *Règles* of some form of Law of Prescription, but also of those who, without putting forward any particular scheme, have made it clear that they consider it essential that effective means should be found for putting an end to this, as they consider, abuse of the principle represented by the Law of Priority. Those who hold these views, are in no sense enemies of the Law of Priority, the essential rôle of which in zoological nomenclature they fully recognise; they do however urge that in the interests of the prestige of the Law of Priority itself, no less than in the interests of nomenclatorial stability, means must be found to render impossible any further changing of names through the introduction of names long rejected as *nomina dubia*. In the earlier part of the present chapter I have drawn attention to certain weaknesses necessarily inherent in any proposal for the establishment of a Law of Prescription and I have suggested that an effort should be made to attain the same ends by means which are not open to these disadvantages. In the subsequent analysis of the problem, I have suggested for consideration various measures which, if adopted, would, I believe, contribute to the desired end. These measures, valuable as (I believe) they would be, would fall short of securing the degree of stability in nomenclature which it is the general wish of zoologists to secure, unless they were supplemented by effective measures (a) for protecting current nomenclatorial usage from attack at the species-name level from trivial names currently treated by specialists as being the trivial names of taxonomically unrecognisable nominal species, and (b) for putting an end to the confusion which arises when the majority of interested specialists so regard a given trivial name but one or a few such specialists claim to be able to recognise the species in question and accordingly cause confusion and unnecessary name-changing by discarding the trivial name currently applied to the species in question in favour of the trivial name of the nominal species, the name of which had previously been regarded as a *nomen dubium*. A particularly important group of trivial names falling in the latter group are the trivial names of nominal species which are the type species of nominal genera, for in every such case there is a twofold state of uncertainty and confusion, first, at the species-name level, second, at the genus-name level. For the purpose of eliminating the doubt, uncertainty and confusion which at present arises at the species-name from the foregoing causes, a solution is here suggested parallel to that submitted in paragraph 16 above in relation to the corresponding problem at the genus-name level. This proposal is that there should be included in the *Règles* a provision requiring the International

Commission on Zoological Nomenclature, on the application of specialists, either (1) to place on the *Official Index of Rejected and Invalid Specific Trivial Names in Zoology* as a name rejected for the purposes of the Law of Priority but not for those of the Law of Homonymy, the trivial name of any nominal species, in respect of which, after the expiry of a period of six months (a) from the publication of the application in the *Bulletin of Zoological Nomenclature*, and (b) from the giving of public notice of the receipt of that application in like manner as though it were one involving the possible use of the plenary powers, the Commission is satisfied that, from the standpoint of the general body of workers in the group concerned, the specific name comprising the trivial name in question is a *nomen dubium*, or (2) if the Commission is not so satisfied, to give a ruling, under the procedure agreed upon by the Paris Congress when confirming the recommendation submitted by the Commission in relation to Article 31 in Conclusion 11(2)(g)(3) at the Fourth Meeting held during its Paris Session (see 1950, *Bull. zool. Nomencl.* 4 : 76), as to the species to which the trivial name in question is to be treated as applying.

(ii) The contribution towards the stabilisation of zoological nomenclature obtainable through the extension of the particular provisions in the "Règles" relating to the identification of nominal species with the taxonomic species represented thereby

19. Action taken by the Thirteenth International Congress of Zoology, Paris, 1948, to promote stability of nomenclature at the species-name level: Up to the meeting of the Thirteenth International Congress of Zoology in Paris in 1948, by far the weakest part of the *Règles* was that concerned with the procedure to be followed in identifying a nominal species with the taxonomic species represented thereby. For the *Règles* contained only the most scanty and inadequate provision (Article 31) in relation to this subject (there referred to as the "subdivision of a species") and no mandatory provisions of any kind in relation to the status of the type specimens of species (the only reference to the concept of a type specimen appearing in the form of a recommendation in Section "A" of the *Appendice* to the *Règles*). A very important step in the direction of stabilising nomenclature was taken when the Paris Congress remedied the defects noted above, (a) by recognising and defining the concepts "holotype," "syntype" and "lectotype" (1950, *Bull. zool. Nomencl.* 4 : 185-186), and (b) by the decision to substitute for the existing Article 31 a new Article setting out in detail the procedure to be followed in determining the specimen to be taken as being the lectotype (or the figure, etc. to be taken to represent the lectotype) in the case of a nominal species based upon two or more specimens, and, where no lectotype for such a species had previously been designated or indicated, the procedure to be followed in selecting one (1950, *ibid.* 4 : 74-76).

20. Directions in which further advances could be made in providing for the stabilising of the trivial names of species: The reforms instituted by the Paris Congress make it possible in a very large number of cases to identify the taxonomic species represented by a given nominal species with absolute certainty, for those reforms provide a means for establishing a single specimen (either the holotype or, where no holotype ever existed, the lectotype)

as the exclusive standard of reference for this purpose. Further, whenever the original description contained a precise indication of the locality in which the type material was obtained, the reforms instituted by the Paris Congress make it possible to determine with precision, in the case of a polytypic species, which of the various subspecies is to be treated as being the nominotypical subspecies. It would be difficult to overrate the practical importance of the decisions taken by the Paris Congress in this matter, for they cut right through the maze of uncertainties and doubts which previously often made it impossible to determine how a given trivial name should be applied and therefore impossible to secure a uniform and stable use for that name. Nevertheless, these decisions fall far short of covering the whole field. First, they provide no means for identifying the taxonomic species represented by a given nominal species in cases where there is no surviving type material or where such material as has survived is in such bad condition as to be useless as the basis for further comparative study of the morphology of the species concerned. If the suggestion submitted in paragraph 18 above is approved, the danger at present to be apprehended from specific *nomina dubia* of this class will be eliminated in all those cases where the trivial names in question are either not at present used at all or are used by only a few specialists; we should still be left however with the very important and numerous cases where there is a genuine doubt as to the way in which a given name should be employed but where nevertheless the name in question is in fact in general use. Second, the Paris reforms do not themselves make any direct contribution to the identification of the subspecies of a polytypic species to be accepted as the nominotypical subspecies, in cases where the locality cited in the original description is either too vague to be of service from this point of view or (as often happens with the older described species) is manifestly incorrect or where no locality at all is cited in the original description. Thus for a large group of polytypic species, including most of those, the names of which were published in the XVIIIth century, the great majority of which are therefore extremely common and well-known species, nomenclatorial stability at the subspecies-name level is unattainable until remedial action is taken by the Congress. Third, the Paris decisions do not provide any means for the stabilisation of the names of fossil species, where the original description contains inadequate or incorrect information regarding the geological age of the formation in which the type material was obtained and the horizon in which it was situated. These are serious defects, each of which calls for attention in any comprehensive scheme for the promotion of stability in zoological nomenclature, for, until suitable remedies are provided in the *Règles*, uncertainty as to the proper use of, and therefore instability in the application of, large numbers of names—many of them of the highest importance—will inevitably continue at the species-name level. Each of these problems is accordingly considered below.

21. Proposed recognition of the "neotype" concept as a means for promoting stability in specific nomenclature: At their meetings held in Paris in 1948 both the International Commission on Zoological Nomenclature and the Thirteenth International Congress of Zoology had under consideration the question whether provision should be made in the *Règles* for the recognition of neotypes. As is well known, the insuperable difficulty encountered in

securing firm identification for species for which no type material has been preserved or for which the surviving type material is in such bad condition (as is commonly the case with fossil species) as to render definite identification impossible has led many specialists in recent years to erect so-called "neotypes" as the standard unit for reference purposes for the species concerned. These privately established "neotypes" possess no standing in nomenclature and are therefore incapable of contributing to stability in nomenclature in any way. It was these reasons that prompted the submission to the International Commission of the proposal considered in Paris that means should be found for the recognition in the *Règles* of the neotype concept. The Commission was sympathetic to this proposal but felt that it was one which required further investigation with interested specialists before decisions could appropriately be taken, particularly as regards such matters as the safeguards to be adopted to prevent the abuse of the neotype system, if recognised, and the procedure to be devised for ensuring that neotypes should be adequately described, and located in a suitable institution where they would be properly looked after and made available to specialists for comparative study. This view was shared by the International Congress of Zoology which accordingly invited me, as Secretary to the International Commission on Zoological Nomenclature to undertake an investigation of the problems involved in conjunction with interested specialists, with a view to the submission of a comprehensive Report, with recommendations for consideration by the Fourteenth International Congress of Zoology when it meets in Copenhagen in 1953. In compliance with the foregoing instructions I have prepared a detailed survey of the problems on which decisions will, in my view, be needed, before workable provisions in regard to neotypes could be introduced into the *Règles*, the purpose of this survey being to elicit the views of interested specialists on the problems involved. The survey so prepared has been published as the sixth of the seven such surveys which I was asked by the Paris Congress to undertake. It appears on pp. 131-147 of the present volume of the *Bulletin of Zoological Nomenclature*, to which readers are therefore referred. It is sufficient here to note that, if (as I believe will be found to be the case) it proves possible to devise a workable system for the recognition of neotypes, the development so achieved will provide an important contribution to the stabilisation of the names of species which, through the lack or inadequacy of the original type material, could otherwise never be identified with certainty.

22. Instability in nomenclature at the species-name level arising out of the lack of provisions in the "*Règles*" for determining the locality to be accepted as the type locality of a given nominal species: Every taxonomist whose studies have led him to consider the position of the older nominal species, particularly those described by Linnaeus in the 10th and 12th editions of the *Systema Naturae* has frequently been brought to a standstill by the impossibility of determining the locality to be accepted as the type locality for the nominotypical subspecies of polytypic species. If we take for example the butterflies, the group of which I possess detailed first-hand knowledge, we find that a most serious state of confusion has arisen through lack of provisions in the *Règles* for dealing with this subject. If we take the butterflies described by Linnaeus, we find that in very few cases only is a reasonably

definite type locality provided; we find also that a large majority of the species concerned are polytypic, many, indeed, having large numbers of highly differentiated subspecies distributed—in the case of the Palaearctic species—over the greater part of Europe and temperate Asia, as well as (in many cases) the portion of Africa north of the Sahara. In highly constant species not differentiated into distinct subspecies the locality in which the type specimen was originally obtained is a matter of interest to the taxonomist but possesses no nomenclatorial significance. It is far otherwise with polytypic species, for in their case a knowledge of the precise locality in which the type material was obtained may represent an essential factor in the determination of the subspecies to be accepted as the nominotypical subspecies of the species in question. The older the nominal species concerned, the more likely is this to be the case, for a high percentage of the XVIIIth century and early XIXth century original descriptions of species are quite insufficient to permit of identification at the subspecies level. In such cases the lack of any rules in the *Règles* relating to the determination of the localities to be accepted as type localities is responsible for a serious element of confusion—and, what is more, an element of confusion which, in the present state of the *Règles*, is absolutely irremediable. To continue as our example the Linnean Palaearctic butterflies, it can be affirmed without hesitation and without the slightest fear of contradiction that the lack of provision in the *Règles* for the determination of type localities represents the major element of confusion and uncertainty remaining in the nomenclature of this group of species. Almost all the species in question are polytypic and in practically none of them is the direct evidence given by Linnaeus sufficient to provide a definite locality for the nominotypical subspecies. In these cases therefore the lack of provisions in the *Règles* in relation to type localities has led to the ridiculous situation that, for the species concerned, several, and, in many cases, numerous subspecies have been distinguished and named but no one knows—and there is no means of ascertaining—which of these subspecies is the nominotypical subspecies and which therefore of the commonly accepted subspecific trivial names is no more than an invalid (subjective) synonym of the trivial name of the species itself and its nominotypical subspecies. It is quite certain that until this deplorable situation has been remedied, no stability can be obtained for the names of some of the commonest Palaearctic species in this group. I have taken the butterflies as an example because I happen to know about them, but in this respect this group does not differ in any essential from other groups. The problem with which we are concerned is therefore a general one and will need to be dealt with as such.

23. Suggested provisions for putting an end to instability in the names of subspecies due to inadequate information regarding type localities: From the nomenclatorial point of view the instability in nomenclature arising from the lack of adequate information regarding the type locality of a given species is essentially similar to that which arises in the case of nominal species, when there is uncertainty as to which of the originally included syntypes is to be regarded as the lectotype of the species concerned. The latter problem is dealt with in the *Règles* in Article 31, which, as amended by the Paris Congress (1950, *Bull. zool. Nomencl.* 4 : 74-76), now contains a set

of rules parallel to those given in Article 30 for the purpose of removing doubts as to the use of generic names by the determination of the species to be accepted as the type species of the genera concerned. In these circumstances, it is suggested that a similar procedure should be adopted for the purpose of getting rid of nomenclatorial instability arising from doubt as to the locality to be adopted as the type locality of the nominotypical subspecies of a given polytypic species. If this general procedure is approved, the problem with which we are concerned becomes relatively simple, for all that we have to do is to examine the rules set but in Article 31 (as amended), which, as explained, are essentially the similar to the long-established rules in Article 30 and to consider which of those rules should be included in an appropriately modified form in the Article to be inserted in the *Règles* in regard to type localities. The following analysis of these rules has been prepared for the consideration of specialists. As in the case of the existing rules in the two Articles referred to above, the rules for the determination of the type locality of a given nominal species should be applied successively, and in the following analysis it has been assumed that there will be a provision to this effect:—

- (1) *Rule (a)*; The first rule should clearly be that, where an author himself designates a type locality, that locality is to be accepted as such (type locality by original designation).
- (2) *Rule (b) (indication of a type by the use of the words “typicus” or “typus”)*; In the form in which this rule appears in the existing Articles 30 and 31 this rule would not be appropriate in the case of type localities. By analogy it would however be suitable at this point to insert a rule prescribing that, where the label attached to a holotype or, as the case may be, the lectotype of a species gives a more precise indication of the type locality of a species than that given in the original description of the species, the more detailed type locality so given is to be accepted as the type locality of the species concerned, when a subsequent author publishes particulars of the more detailed type locality given on the label (type locality by original indication).
- (3) *Rule (c) (type by monotypy)*; This rule would not be needed in a set of rules relating to type localities, for, where a nominal species is based upon a single specimen, the type locality of that species will already have been determined either under Rule (a) or under Rule (b).
- (4) *Rule (d) (type by tautonymy)*; The trivial names of species and subspecies frequently consist of neo-Latin words in adjectival form based upon the name of the locality in which the species was first obtained (e.g. *zermattensis*, *adriaticus* (in the case of marine animals), *altaianus*). I have no doubt that there are cases also where a trivial name consists of the precise name of the locality in which the species was first obtained, where that place name has the appearance of a Latin word, although I cannot at the moment recall such an instance. It is suggested that there should be a rule under which the locality indicated in the trivial name of a species or subspecies shall be accepted as the type locality of that species or subspecies in cases where the

type locality has not been determined under any of the preceding rules (type locality by absolute or virtual tautonymy).

- (5) *Rule (e) (exclusion of certain elements from consideration)*: This rule, as it appears in Article 30, is misplaced, for it contains nothing but certain qualifications as to the manner in which a type species can be selected for a genus by a subsequent author, and it should therefore form part of Rule (g), the rule dealing with subsequent selection. For similar reasons a rule on the lines of Rule (e) clearly should not be inserted at this point in the rules to be laid down for determining the type locality of a species. Turning to the three sub-rules included in Rule (e) in Article 30, the first is entirely unnecessary if the Rule relating to the subsequent selection of a type locality is properly drafted, for that Rule should be so worded as to make it clear that no locality can be validly selected as the type locality of a species, if it was not included among, or comprised within one of, the localities cited at the time when the species in question was originally described. The second sub-rule in Article 30 deals with a question which does not arise in connection with the determination of a type locality. The third sub-rule (which excludes from eligibility for selection as the type species of a genus a species only doubtfully referred to that genus by the original author of the name of that genus) could appropriately be inserted in a modified form in the provisions relating to type localities as a provision that a locality only doubtfully cited by the original author of a species should not be eligible for selection as the type locality of that species. It would be more appropriate however that this provision should not be included in the series of rules which we are now considering but should find its place in a general provision (corresponding to the provision agreed upon by the Paris Congress for inclusion in the revised text of Article 30—see 1950, *Bull. zool. Nomencl.* 4: 179-180) which would prescribe that the localities to be regarded as having been originally cited for a given nominal species shall be (i) the locality or localities cited in the original description of that species (including any more detailed locality ascertainable from the label attached to the holotype or, where no holotype was designated, the syntype later selected to be the lectotype) or any restricted locality comprised within one of the localities aforesaid, and (ii) the locality or localities cited in any previously published descriptions cited by the original author as applying to the species in question, but shall not include any locality only doubtfully cited by the original author.
- (6) *Rule (f) (determination of the type species of a genus on the publication of a substitute generic name)*: This Rule contains nothing which could appropriately be adapted for inclusion in the rules for the determination of the type locality of a species. It would be desirable however that at some appropriate point in the new Article there should be inserted a provision making it clear that, when the name of a species is found to be invalid and a new name is published for it, the new

nominal species so established shall have the same type locality as the nominal species for which it has been established as a substitute.

- (7) *Rule (g) (type by subsequent selection)*: In the great majority of the older named species, no type locality was designated and a list of localities—often a long list—was cited. In such cases a precise type locality may be obtainable under the suggested Rule (b) above and in a few cases also under the later Rules suggested. In most cases however it will be necessary to rely upon the method of subsequent selection in order to determine the type locality of a species belonging to the group concerned. It is proposed, therefore, that there should be a Rule that, where the type locality of a species has not been designated or indicated under any of the preceding Rules, the type locality of that species shall be whichever of the originally included localities is first definitely selected as such at a later date either by the original author or by any other author. The rule should (on the analogy of Article 30 and of Article 31 (as amended by the Paris Congress) contain a provision that the expression “select a type locality” is to be rigidly construed and to exclude the mere mention on a later occasion of a locality as one in which the species occurs, it being necessary, for the purpose of the present Rule, that the author concerned should make it clear either that he is himself selecting the locality in question to be the type locality or (on the analogy of the addition made by the Paris Congress to Rule (g) in Article 30—see 1950, *Bull. zool. Nomencl.* 4: 181-182) that he considers that that locality had already been determined as the type locality of the species concerned.

24. A series of rules of the kind suggested above would provide a simple and logical means for determining the type locality of any given nominal species on lines parallel to those already adopted in the *Règles* (Articles 30 and 31) for other purposes; in this sense therefore the rules suggested will appear familiar to workers and their operation should be facilitated thereby. There is however one situation which arises in connection with the determination for nomenclatorial purposes, of the type locality of a species which does not arise in connection either with the determination of the type specimen of a species or with that of the type species of a genus, for which it will be necessary to make provision in the proposed rules. The situation is that which arises when, after a very wide originally cited locality, such as “Habitat in Europae sylvis” (the locality given by Linnaeus, 1758 (: 471) for *Papilio hyperantus*) has been defined, under the suggested Rule discussed in paragraph 23(7) above, as meaning for nomenclatorial purposes “Sweden” (Linnaeus in 1758 having given a reference to the entry relating to this species in the first edition of his *Fauna svecica*), it is later found that more than one subspecies of the species in question occurs in Sweden and therefore that the restricted locality “Sweden” is not sufficiently precise to make it possible definitely to determine which of the Swedish subspecies concerned should be regarded as the nominotypical subspecies. The practice generally followed in such cases—a practice which however has no legal basis, there being at present no rules dealing with this

subject—is to select as the restricted type locality of the species some locality situated within the area comprised in the earlier restriction (e.g. in a case such as that cited above, to select some town or other locality in Sweden to be the type locality). This practice has the merit both that it is logically superior to any other that could be suggested and also that, being in accordance with the present general (but entirely unofficial) practice, it represents the procedure best calculated to promote nomenclatorial stability. It is accordingly suggested that at the end of the set rules outlined in paragraph 23 above, there should be added a Rule prescribing that, when, after a type locality has been selected under the Rule discussed in paragraph 23(7), it is found that the restricted type locality so selected is not sufficiently precise, it shall be open to any author further to restrict the type locality of the species concerned by specifying some place or area comprised within the previously selected type locality to be the restricted type locality of the species in question. This rule should be so worded as to permit the selection, if necessary, of a succession of restricted type localities, each situated within the area comprised in the "type locality" last previously so selected.

25. It will certainly be necessary (as indicated in paragraph 23(5) above) to provide in the rules relating to type localities a provision under which a locality cited by an earlier author in a work to which a bibliographical reference is given by the author of a given specific name shall rank as one of the localities originally given for the species so named. On the other hand, we know from innumerable examples that bibliographical references cited by early authors (including Linnaeus himself) are frequently incorrect, the species figured or described by the earlier author (often very badly, by modern standards) not being the same species as that to which the later author first applied a binominal name. Moreover, in many cases old authors cited (as some modern authors still cite) bibliographical references at second hand, without having themselves verified that the species described or figured in the works so referred to was in fact the same species as that to which the author concerned was giving a name. Even Linnaeus himself sometimes cited references to books which he had not seen—doing so, as is clear, for the sake (as he considered) of completeness—for on at least one occasion he published a note regretting the inadequacy of his library and inviting zoologists to send him bibliographical references. In many cases the foregoing represents an inescapable dilemma, but this is not always so. For in (for example) the *Systema Naturae* very large numbers of species are named without an adequate type locality, but with bibliographical references of two kinds of very unequal value, namely (i) references to earlier works by Linnaeus himself, such as the First Edition of his *Fauna svecica* or his *Öländska och Gothländska Resa*, and (ii) references to earlier works by other authors, most but not all of which had been examined by himself. The references belonging to the first of these classes are in every way superior to those belonging to the second class, for they are based upon the personal knowledge and experience of the author himself (Linnaeus), while the second are not. It is accordingly suggested either (1) that the definition of "originally included locality" proposed in paragraph 23(5) above, should be so modified as to secure that, where there is a choice between (a) a locality or localities given in an earlier work by the same author, and (b) a locality or localities

given in works by earlier authors to which bibliographical references are given, the latter are to be excluded from account, or (2) that, while there should be no mandatory provision on this subject, there should be inserted in the *Règles* a *Recommandation* recommending authors, when selecting a type locality, to give preference to any localities given in earlier works by the author of the specific name in question when bibliographical references to such earlier works were cited in the original description of the species in question.

26. The next question which it is necessary to consider is the procedure to be prescribed for overcoming the difficulty which arises when the original locality or one of the original localities cited by the author of the name of a given species are found to be incorrect. Mistakes of this kind are of frequent occurrence in the older literature, as the result, no doubt, of incorrect information furnished to the author concerned by the collector or other person from whom the original specimens were received. Similar mistakes are not infrequent in the modern literature where expeditions in remote countries have had to rely upon material obtained in the interior by native collectors. A species based upon an erroneous type locality occupies a position very similar to that occupied by a genus based upon an erroneously determined type species. It is recommended therefore that the solution to be adopted should be similar (see 1950, *Bull. zool. Nomencl.* **4**: 158-159), that is, that the Articles dealing with type localities should provide that, a locality cited or indicated by an author in the original description of a species as being the locality or one of the localities in which the type material or part of it was obtained is to be deemed to be such a locality, save that, where specialists are of the opinion that the type locality of the species, as determined under the rules suggested in paragraph 23 above is incorrect, the case is to be submitted to the International Commission on Zoological Nomenclature, which, if satisfied that the type locality is erroneous, is to designate as the type locality of the species concerned, either (a) the actual locality from which the type material was obtained, if this is known from sources other than the original description of the species concerned, or, if that locality is not known, a locality, the selection of which as such would harmonise best with current nomenclatorial practice, except, where the Commission, on the advice of specialists, is of the opinion that that practice is erroneous and that its perpetuation would lead to confusion, in which case the Commission shall designate as the type locality of the nominal species in question whatever locality it may consider to be the most appropriate. It will clearly be important in such cases to secure a thorough consultation with interested specialists before a decision is taken by the Commission, and it is accordingly suggested that the proposed Article (1) should place on the Commission the obligation to give public notice of the receipt of any application for the varying of a type locality in like manner to that prescribed in cases involving the possible use of the plenary powers and (2) should prescribe that a period not of six months but of twelve months shall elapse between the date on which such public notice is given and the date on which the Commission may take its decision on the application in question.

27. In addition to providing for the correction of erroneous type localities, the Article relating to the determination of type localities will need to provide also for the case where no locality was known for a given species at the time

when it was described and named and also for those cases where by inadvertence the locality, though known to the author by whom the species was named, was not mentioned in the original description of the species in question. In the second of these cases the scheme should, it is suggested, provide that the type locality should be determined either under the Rule suggested in paragraph 23(2) above or under the Rule suggested in paragraph 23(4), if either of those Rules were applicable. In all other cases falling in the second of the two main groups indicated above and in all cases falling in the first of those groups, the procedure to be adopted for determining the locality to be treated for nomenclatorial purposes as the type locality of the species concerned should, it is suggested, be the same as that suggested in paragraph 25 for determining the locality to be accepted as the type locality for nomenclatorial purposes of a species, for which an erroneous locality was given at the time when the species concerned was first described and named.

28. It is at least theoretically possible that, after a restricted type locality had been determined for nomenclatorial purposes by means of subsequent selection under the rule suggested in paragraph 23(7) above, the holotype or a syntype available for selection as lectotype that hitherto had been missing might be rediscovered and that specimen might be found to bear a label having on it a detailed locality different from that selected under the Rule referred to above. Again, where a species was originally described without an indication of the locality in which the type material was obtained and a type locality had been determined for nomenclatorial purposes under the procedure suggested in paragraph 27 above, it might happen that the hitherto missing type material might be rediscovered and that, as in the case considered immediately above, that material might bear a label giving the locality in which that material had been obtained. Finally, it might happen that, after a type locality had been determined for nomenclatorial purposes for a species for which no locality was cited at the time when that species was named, there might be discovered manuscript diaries or notes by the author by whom the species had been named giving detailed particulars of the locality in which the type material of that species had been obtained. (A good example of this last-named class of case is represented by my discovery among the Hübner-Geyer manuscripts of a manuscript note by Geyer giving the localities in which had been captured a large number of species named by him without an indication of the locality of capture in his continuation of Jacob Hübner's *Sammlung europäischer Schmetterlinge* (Hemming, 1937, *Hübner* 2: 138-140). It is suggested that, as regards all cases such as those discussed above, the scheme should provide that the question of the locality to be accepted for nomenclatorial purposes as the type locality of the species concerned should be referred to the International Commission immediately upon the discovery of such supplementary information and that it should thereupon become the duty of the Commission to decide in the light of the additional information furnished what locality was to be taken for nomenclatorial purposes as the type locality of the species in question, the procedure to be adopted by the Commission being similar to that suggested (in paragraph 26 above) to be adopted by the Commission when considering an application for the correction (for nomenclatorial purposes) of an erroneous type locality.

29. Instability in the nomenclature of Fossil Species arising from the inclusion in the original description of species of unduly vague, incomplete or erroneous particulars relating to the locality and situation in which the type material was obtained: The need for nomenclatorial purposes of a clearly defined type locality is often just as essential in the case of Fossil Species as it is in that of Recent Species; so far as I can see, the scheme for determining the locality to be accepted for the foregoing purpose as the type locality of a given species—which was drawn up entirely with Recent Species in mind—is just as suitable for Fossil Species. In one important respect, however, Fossil Species differ in the present context from Recent Species, namely that it is just as important to know the Geological Age of the rocks in which a given fossil was found and the horizon in which it was located as it is to know the locality in which that fossil was discovered. It is suggested therefore that for the purpose of promoting stability in the nomenclature of Fossil Species at the species-name level, the scheme suggested in the immediately preceding paragraphs for determining (for nomenclatorial purposes) the locality to be taken as the type locality should be supplemented by a provision applying the same procedure for determining the Geological Age of the rocks in which the type material of a Fossil Species is to be treated, for which that material was located. The procedure for determining these questions would naturally be the same as that for determining the locality to be accepted as the type locality of a species, whether Fossil or Recent.

30. Instability in the nomenclature of parasitic species arising from the inclusion, in the original description of species, of unduly vague, incomplete or erroneous particulars relating to the host species on or in which the type material was obtained: In the preceding discussion we have concerned ourselves with the nomenclatorial problems arising from defective information regarding the localities in which the type material of species was obtained and, in the case of Fossil Species, the Geological Age of the rocks in which the type material was obtained and the horizon in which it was located. That discussion was concerned with overcoming the difficulties which, in the case of non-parasitic species, give rise to nomenclatorial instability at the species-name level. In the case of parasitic species, however, the instability in nomenclature which may arise from defective information on the subject of the host species may be more serious than that arising from defective information regarding the locality in which was found the specimen of the host species on or in which the type material of the parasitic species was obtained. It is accordingly suggested that the scheme for promoting stability at the species-name level by providing means for determining for nomenclatorial purposes the locality to be accepted as the type locality should be supplemented by a parallel and similar procedure for eliminating instability in the nomenclature of parasitic species for determining the species to be accepted for nomenclatorial purposes as the host species.

(b) The promotion of nomenclatorial stability by the more extended use of existing provisions for stabilising individual names

31. Proposal to supplement the introduction into the "Règles" of provisions designed to promote nomenclatorial stability by a more

extended use of the existing provisions for stabilising individual names: In the preceding Section (Section (a)) we have considered, first, the possibility of promoting stability in zoological nomenclature through the adoption of some novel expedient such as a "Law of Prescription," second, through amplifications, clarifications and extensions effected within the general framework of the existing *Règles*. We must now turn to consider the contribution that can be obtained by a more extended use of the existing provisions for stabilising individual names. It will be convenient for this purpose briefly to review the character and extent of those provisions.

32. Provisions for stabilising individual names instituted prior to 1948: Prior to the meeting in Paris in 1948 of the Thirteenth International Congress of Zoology, two measures only had been taken to stabilise individual names. These measures which were taken by the Ninth International Congress of Zoology at Monaco in 1913, were the establishment of the *Official List of Generic Names in Zoology*, and the grant to the International Commission on Zoological Nomenclature of plenary powers to suspend the normal application of the *Règles* in cases where the Commission was satisfied that otherwise greater confusion than uniformity would ensue. Though these measures were already thirty-five years old at the time of the Paris Congress, such little use had been made of either during that period that it can confidently be claimed that the full advantages of neither had by that time been appreciated by the general body of zoologists. That so little benefit had been obtained from the foregoing decisions was due in varying extent to two quite distinct causes: first, the interruptions caused by two World Wars and the attitude of defeatism and lassitude which marked the inter-war years; second, the technical defects of the measures taken by the Monaco Congress to give practical effect to these decisions. The defects which retarded the growth of the *Official List* included: (1) the failure at Monaco to integrate this mechanism into the general body of the *Règles*; (2) the failure to accord a defined status to names placed on the *Official List*; (3) the absence of provisions as to the particulars (bibliographical and other) to be included in entries made on the *Official List*; (4) the fact that decisions placing names on the *Official List* were scattered over a large number of separate *Opinions* published over a long period of years, and in consequence were not at all easily accessible; (5) the lack even of an index of the names so far placed on the *Official List*. The defects which impaired the value of the Commission's plenary powers included: (1) the failure at Monaco to integrate this important development into the *Règles* themselves, thereby lending colour to the argument later advanced by opponents of this method of nomenclatorial stabilisation that the decision establishing the plenary powers was in some undefined way of inferior status to the decision under which the *Règles* themselves had been established, although in fact both had been established in exactly the same way, namely by a decision taken by an International Congress of Zoology in Plenary Session; (2) the fact that the use of these powers was made subject to the *Liberum Veto*, under which any one member of the Commission was placed in a position virtually to nullify the grant of those powers, the only remedy in such a case being the cumbrous and slow-moving procedure represented by the appointment of a Special Board by the Chairman of the Section on Nomenclature of the next International Congress of Zoology;

(3) the lack of any means at the immediate disposal of the Commission for bringing applications involving the possible use of the plenary powers to the attention of interested zoologists. In these circumstances it is not surprising that in the thirty-five years following the institution of these two measures only some six hundred names had been placed on the *Official List* and the plenary powers had been used on only a handful of occasions. Thus, both the reforms instituted by the Monaco Congress had failed to secure even the limited degree of nomenclatorial stabilisation which they were intended to achieve.

33. Provisions for the stabilisation of individual names instituted by the Thirteenth International Congress of Zoology, Paris, 1948 :

The Thirteenth International Congress of Zoology at its assembly in Paris in 1948 evinced a determination to take every immediately practicable measure to promote stability in nomenclature and for this purpose did not hesitate to sweep aside any time-worn procedures which might stand in the way of the achievement of this object. The members of the Commission in Paris shared the general view of the Congress and the Commission was able therefore to co-operate closely with the Congress in devising reforms designed to curb the constant changing of names of the kind which had proceeded uninterruptedly during the inter-war years but which was so repugnant to the post-war sentiment of zoologists, especially, though not all exclusively, those of the rising generation. The matters to which the Commission and the Section on Nomenclature immediately addressed themselves at Paris included : (1) the modernisation and reform of the provisions relating to the grant to the Commission of Plenary Powers to vary the normal operation of the rules for the purpose of avoiding confusion in nomenclature and the incorporation of those provisions in the *Règles* themselves (1950, *Bull. zool. Nomencl.* **4** : 55-56) ; (2) the removal of the major obstacle to stability represented by the long-standing doubt as to the meaning to be applied to the expression "nomenclature binaire" as used in Article 25 (a subject on which unfortunately the Commission itself had formerly found itself in opposition to the general sentiment of zoologists) (1950, *ibid.* **4** : 63-66) ; (3) the reform of the rules governing the *Official List of Generic Names in Zoology*, these reforms including the grant of a high degree of protection for names stabilised in this way, the incorporation in the *Règles* of provisions regulating this *Official List*, and the addition to the *Règles* of a special Schedule in which the *Official List* should in future be recorded, the entries made thereon being thus given the same status as that of any other part of the *Règles* (1950, *Bull. zool. Nomencl.* **4** : 267-268, 271, 334). Having in this way re-formed and revived the two important organs for the promotion of nomenclatorial stability established by the Monaco Congress and at the same swept away the most harmful of the obscurities which had hitherto marred the *Règles*, the Paris Congress turned its attention to devising further means for stabilising individual names. The most important of the measures so taken were : (1) the establishment of an *Official List of Specific Trivial Names in Zoology* with a status similar in all respects to that accorded to the *Official List of Generic Names* under the reforms then agreed upon, including the incorporation in the *Règles* of provisions regulating this *Official List* and the addition to the *Règles* of a special Schedule for its reception (1950, *Bull. zool. Nomencl.* **4** : 270-271, 283-284, 333-334) ; (2) the establishment of an

Official Index of Rejected and Invalid Generic Names in Zoology and of a corresponding *Official Index of Rejected and Invalid Specific Trivial Names in Zoology*, the purpose of these *Official Indexes* being to provide a place of permanent burial for names (whether generic or trivial) which were either suppressed by the Commission under its plenary powers or declared by it to be invalid (thus depriving such names of further power of creating confusion and instability in nomenclature), the inclusion in the *Règles* of provisions regulating these *Official Indexes* and the addition to the *Règles* of *Schedule* for their reception (1950, *ibid.* 4: 334); (3) the inclusion among the duties of the International Commission on Zoological Nomenclature (which it was then decided should in future be specified in an Article to be included in the *Règles*) of the express duty of maintaining the *Official Lists* and of promoting their development to the full extent of its power (1950, *ibid.* 4: 269, 271).

34. The "Official Lists" viewed as instruments for the stabilisation of zoological nomenclature: We have already noted (paragraph 32) that the extremely limited use made during the period 1913-1948 of the mechanism provided by the *Official List of Generic Names* was due to an important extent to the inadequacy of the means placed at the disposal of the Commission for operating that mechanism, coupled with the half-hearted spirit in which the Congress had established the *Official List* and in which the Commission had received it into its charge. But it is likely that, even if the Commission had been strictly enjoined by the Monaco Congress to develop the *Official List* by every means at its disposal and had been given all the powers necessary for this purpose, progress with the development of the *Official List*, though far more rapid than in fact it was, would nevertheless have been relatively slow: for it was not until after the end of the First World War in 1918 that comprehensive efforts were made by specialists in particular groups to apply the *Règles* strictly to the names of the genera and species comprised in those groups. Clearly, such a survey is an essential prerequisite to any concerted action for the stabilisation of names in any group, for, until such a survey has been made, it is impossible either to determine which of the important names in the group are invalid and may call for special treatment under the Commission's plenary powers and which names are valid in all respects and are thus immediately eligible for admission to the respective *Official Lists*. In more recent times considerable progress has been made in the carrying out of such surveys and, in consequence, the opportunity for placing large numbers of names on the *Official Lists* is much greater today than ever before and the number of names available for standardisation in this way is likely to grow steadily from now onwards. The circumstances are therefore peculiarly favourable for a forward drive for stabilisation through the *Official Lists*. It was sometimes argued in the past—and may still be argued here and there—that but little benefit is obtained by placing valid names on the *Official List*. But this, it is suggested, is a short-sighted and misconceived point of view if the object is to prevent further upsettings of well-established names. For in fact, however carefully a worker or group of workers may search the literature (itself a time-consuming and undesirable substitute for zoological studies), the accumulations of books and papers published during the best part of two hundred years (1758-1952) is so vast and many of the older works

are so scarce that it is virtually impossible to be sure that even well-known names published 150 years ago and in general use ever since are absolutely safe from attack by older names excavated from long-neglected literature. To take the birds alone, no one a couple of years ago would have supposed that it would be possible to identify considerable numbers of Gmelin's hitherto unrecognisable nominal species and thus to bring his names for those species into use in place of the names which in many cases those species have borne for decades; nor was it to have been expected that new Linnean names would have been unearthed with further consequent displacement of well-established names. Yet both these things have happened and the same process is at work in the nomenclature of other parts of the Animal Kingdom. If the names uprooted by these taxonomic and bibliographical studies had already been placed on the appropriate *Official Lists*, they would not have been liable to immediate overthrow on the publication of the foregoing studies, for under the regulations now governing the *Official Lists* a name once placed upon either of those *Lists* cannot be put on one side, unless and until, on having the facts placed before it, the Commission so directs. But this is not the only reason why the placing of a name on one of the *Official Lists* constitutes an important stabilising factor, for the *Official Lists* constitute—and, as they grow in length, will increasingly constitute—the standard of reference for future workers. Moreover, for non-specialists such as many teachers of zoology and workers in the field of applied biology, the *Official Lists*, when properly developed in accordance with the instructions of the Congress, will, by reason of their authoritative character, provide the indispensable and long-desired source from which such workers can ascertain the valid names for the animals with which they are concerned, without need to have recourse to specialist literature. Thus, the *Official Lists* offer a hitherto undreamt-of means for securing stability for the names of genera and species. All that is needed to secure this goal in any given group is a single concerted effort on the part of specialists in that group for the purpose of preparing the requisite applications to the International Commission. Once that effort has been made and the principal names (generic and trivial) in that group have been placed upon the *Official Lists*, the nomenclature of that group will have freed itself from the risk of constant change and growing confusion and the workers in that group will be free for the first time since the sub-Linnean times of the XVIIIth century wholeheartedly to devote themselves to zoology, unhampered by the need to devote a large part of their time and energy to the consideration of disputed questions of nomenclature.

35. The Commission's plenary powers as an agent for securing nomenclatorial stability in certain cases: In the preceding paragraph we have considered the value of the *Official Lists* as a means for stabilising (and thus protecting) names (whether generic or trivial) which in any group are today believed by specialists in that group to be the oldest available (and, therefore, valid) names for the genera and species concerned. In doing so, we noted that large advances towards stabilisation can be obtained in this way only after a careful preliminary survey has been made of the nomenclature of whatever may be the group concerned, for it is only such surveys that can provide satis-

factory *prima facie* evidence as to the validity of names now in current use. Inevitably, such surveys will not only show which of the names in use in that group are, so far as current knowledge can show, both nomenclatorially available and taxonomically valid; for such surveys will show also which of the names in present-day use in that group are invalid nomenclatorially, either as subjective or objective synonyms or as junior homonyms. This residuum will need to be considered carefully from the point of view of the possible use of the Commission's plenary powers; in every case where those powers are used to validate any such name, that name will (under the procedure laid down by the Paris Congress) at once take its place on the appropriate *Official List*, its availability thereupon ceasing to be a matter for discussion. Those who hitherto have looked askance at the use of the Commission's plenary powers have often based their attitude not upon an avowed liking for name-changing for its own sake but upon the ground either that the frequent use of the plenary powers might undermine the *Règles* or that the number of cases where the use of the plenary powers might have to be invoked would be so large as to reach proportions beyond the capacity of the Commission to deal with. The first of these fears has been completely eliminated by the decision by the Paris Congress to incorporate the plenary powers provisions in the *Règles*, thus making action under those powers just as much a compliance with the provisions of the *Règles* as is (for example) action taken under Article 25 (Law of Priority) or under Articles 34-36 (Law of Homonymy). The second of the fears referred to above can be found to be justified or unjustified only after the nomenclature of any given group has been subjected to the preliminary study to which reference has already been made. My belief—based upon my own experience—is that the fears under this head expressed by workers in groups in which the requisite preliminary study has not been carried out are greatly exaggerated. For example, it may not be without interest to note that, when during the 'thirties I carried out a comprehensive review of the generic names of the butterflies (a group in which, because of the high proportion of old names involved, it might have been expected that extensive use of the Commission's plenary powers would be necessary if confusing and otherwise objectionable name-changing was to be avoided), the number of names which, in agreement with fellow-workers in the group, I considered it essential to bring before the Commission as cases requiring (in our judgment) the use of the plenary powers was extremely small, representing little more than one-tenth of one per cent. of the total number of names comprised in the group. Now that this initial effort has been made and decisions reached by the Commission on the small number of cases submitted, it is extremely unlikely that the future will witness any but a few scattered further applications for the use of the plenary powers in connection with the generic names in this group, such few further applications as may be found to be necessary being due to the discovery in the case of well-known names of technical nomenclatorial defects not so far detected. The experience described above in the case of the butterflies does not stand by itself, for similar results have followed the surveys in the generic nomenclature of other insect groups carried out in connection with the preparation of the work entitled "Generic Names of British Insects" sponsored by the Royal Entomological Society of London, jointly with the Department of Entomology of the British Museum (Natural History), the number of cases where it was considered necessary to

make application to the Commission for the use of its plenary powers being in each group very small in relation to the total number of names examined.

36. In these circumstances, we may, therefore, fairly conclude :—(1) that as and when the nomenclature of any given group is subjected to critical examination, a certain number of cases will be brought to light where there will be grounds for asking the Commission to use its plenary powers for the purpose of preventing the confusion which the rejection of those names would cause, but that the absolute number of such cases is likely to be small and that the number of such applications, judged in relation to the total number of names in the group concerned, will certainly be infinitesimal; (2) that, after a survey has been made for any given group and the resulting problems have been decided by the Commission, the number of cases where applications for the use of the plenary powers in connection with the names of genera or species in that group will arise may be expected to be negligible. Taking the whole field of zoological nomenclature, we find today that considerable numbers of applications are now being received. That this should be so is entirely to be expected and is the inevitable—and, in every way, desirable—result of the growing efforts of specialists in many groups to obtain decisions under the plenary powers in regard to names of special importance, which have long been known to be invalid but which have not hitherto been brought before the Commission because of the fear on the part of the specialists concerned—a fear which, so far as the inter-war years were concerned, was justified—that the Commission was not prepared to take a forward line in the active pursuit of stability in nomenclature.

37. Until these pent-up applications have found their way to the Commission, the number of applications received for the use of the plenary powers is likely to remain relatively high. Once this abnormal transitional phase has been passed through, the rate at which applications are submitted involving the possible use of the plenary powers is likely to sink to a lower level: thereafter the applications received may be expected to consist mainly of batches of cases relating to names in particular groups, as and when the nomenclature of those groups is subjected to critical examination of the kind described in the paragraph 35 above. In addition to applications for the use of the plenary powers in relation to particular names it may be expected also that from time to time applications will be submitted to the Commission for the suppression for nomenclatorial purposes of long-forgotten names contained in neglected works of ancient date as and when more of these are unearthed. Clearly, the plenary powers have a most valuable contribution to make to the stabilisation of zoological nomenclature by suppressing these antiques, as soon as they make their appearance and before they have an opportunity of doing serious harm by upsetting—for no possible useful purpose—names in current use.

PART 3. REQUEST TO SPECIALISTS FOR ADVICE

38. Request to specialists for advice: The question of the means to be found for promoting stability in zoological nomenclature is by far the most important of the problems which, by decision of the Thirteenth International Congress of Zoology, Paris, 1948, is to be submitted for decision to the Fourteenth International Congress when it meets at Copenhagen in 1953. It is a question which directly concerns every worker in systematic zoology, whether a neontologist or a palaeontologist, and is of the utmost moment also to teachers and to applied biologists of all kinds. It is very important therefore that the ground should be exploited as thoroughly as possible before the Copenhagen Congress and that every possible measure for promoting stability should be carefully examined; so that, if that measure appears practicable, it may be incorporated in the general scheme to be submitted to the Congress. For this reason it is particularly desired that as many workers as possible in as many different fields as possible should notify the International Commission of their views as to the action which they consider would be best calculated to achieve the end in view. It is for the purpose of eliciting such views and in compliance also with the duty imposed upon me by the Paris Congress that I have prepared the present general survey of possible measures for achieving stability in zoological nomenclature. Having done so, I now earnestly invite workers to furnish statements commenting upon the various suggested methods discussed in the present paper and, if they are of the opinion that there are other methods which might usefully be adopted, either in addition to, or, in part substitution for, the methods which I have listed in the present paper, to indicate the nature of those methods and the measures necessary to make them administratively practicable.

39. Specific questions to which answers are invited: While, as I have indicated, constructive suggestions of any kind will be most gratefully received by the Commission, there are certain specific questions on which the advice of specialists is particularly desired. These questions are:—

- (1) Do you consider that the stabilisation of zoological nomenclature would best be promoted by the introduction into the *Règles* of a novel expedient such as a "Law of Prescription" (paragraphs 4-7), or do you consider that the foregoing objective could best be secured by means of amplifications, clarifications and extensions carried out within the existing framework of the *Règles* (paragraphs 9-30) and by the more extended use of the existing provisions for stabilising individual names through the *Official Lists* (paragraphs 31-37) ?
- (2) If you are in favour of the adoption of a "Law of Prescription," what suggestions have you for overcoming the disadvantages and difficulties involved (paragraph 7) ?

- (3) If you consider that the best course would be to promote stability by means of developments carried out within the existing framework of the *Règles* and by an extension of the *Official List* procedure, what are your views on the various suggestions enumerated in paragraphs 9-37 of the present inquiry ?
- (4) Have you any suggestions for promoting stability in zoological nomenclature in addition to those enumerated in the present inquiry ? If so, please give particulars.

40. Request as to procedure to be followed in furnishing comments in response to the present appeal for advice : As has been explained in the introductory note to the present series of papers (1952, *Bull. zool. Nomencl.* 7:1-3), the Commission does not possess sufficient funds to enable it to employ any whole-time clerical or typing staff. In consequence, zoologists who are kind enough to respond to the present appeal for advice will be rendering a double service if they will be so kind as to comply with the following procedure when forwarding statements of their views, that is, that those statements should be typewritten, double-spaced, with wide margins, on one side of the page only, and should be furnished in duplicate. Finally, it should be noted that communications arising out of the present appeal for comment and advice on the problem of how best to stabilise zoological nomenclature should be addressed to myself, as Secretary to the International Commission on Zoological Nomenclature (address : 28 Park Village East, Regent's Park, London, N.W.1, England). Every communication on the foregoing subject should be clearly marked with the Commission's Reference Number, Z.N.(S.)359.



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IMPORTANT NOTICE

The papers published in the present Part have been prepared for the express purpose of drawing attention to certain important questions relating to the clarification, amendment and expansion of the *Règles Internationales* which will be considered by the Fourteenth International Congress of Zoology at its meeting in Copenhagen in 1953.

Interested specialists are particularly invited to furnish comments and advice on the foregoing questions, so that account may be taken of their views in the formulation of recommendations to the Copenhagen Congress.

Specialists responding to the foregoing appeal will render a double service to the International Commission on Zoological Nomenclature, if, when they furnish statements setting out their views, they will be so good as to send those statements, typewritten on one side of the page only, double-spaced and with wide margins. All such statements should be furnished in duplicate.

Unnecessary work and consequent delay are caused in the office of the International Commission, if statements on two or more subjects are sent on a single sheet of paper, owing to the copying which this involves. Correspondents are therefore particularly requested, when furnishing notes to the Commission on more than one subject, to use a separate sheet of paper for the note on each subject.

All communications should be clearly marked with the Commission's Reference Number and should be addressed to FRANCIS HEMMING, C.M.G., C.B.E., Secretary to the International Commission on Zoological Nomenclature, 28 Park Village East, Regent's Park, London, N.W.1, England.

VOLUME 6

The publication of Volume 6 of the *Bulletin*, which deals with applications relating to individual nomenclatorial problems, was interrupted to permit of the publication of the present volume relating to general problems to be submitted to the Copenhagen Congress in 1953. The remaining Parts of Volume 6 will be published at an early date.

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15th April, 1952

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Edited by

FRANCIS HEMMING, C.M.G., C.B.E.

Secretary to the International Commission on Zoological Nomenclature



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15th April, 1952

NOTICES PRESCRIBED BY THE INTERNATIONAL CONGRESS OF ZOOLOGY

1. The following notices are given in pursuance of decisions taken, on the recommendation of the International Commission on Zoological Nomenclature (see 1950, *Bull. zool. Nomencl.* **4** : 51-56, 57-59), by the Thirteenth International Congress of Zoology, Paris, July, 1948 (see 1950, *Bull. zool. Nomencl.* **5** : 5-13, 131).

(a) Date of commencement by the International Commission on Zoological Nomenclature of voting on applications pub- lished in the "Bulletin of Zoological Nomenclature"

NOTICE is hereby given that normally the International Commission will start to vote upon applications published in the *Bulletin of Zoological Nomenclature* on the expiry of a period of six calendar months from the date of publication in the *Bulletin* of the applications in question. Any specialist who may desire to comment upon any of the applications published in the present Double Part (vol 7, Double Part 7/8) of the *Bulletin* is accordingly invited to do so, in writing, to the Secretary to the Commission as quickly as possible and in any case in sufficient time to enable the communication in question to reach the Secretariat of the Commission before the expiry of the six-month period referred to above.

(b) Notice of the possible use by the International Commission on Zoological Nomenclature of its plenary powers in certain cases

NOTICE is hereby given that the possible use by the International Commission on Zoological Nomenclature of its plenary powers is involved in applications published in the present Double Part of the *Bulletin of Zoological Nomenclature* in relation to the following names :—

- (1) names for butterflies published in 1775 (a) in vol. 1 of Cramer's *Uitlandsche Kapellen*, (b) in the "Wiener Verzeichniss" of Denis & Schiffermüller, (c) in Fabricius' *Systema Entomologiae*, and (d) in von Rottemburg's *Anmerkungen* published in vols. 6 and 7 of the *Naturforscher*, determination of relative priority of (Z.N.(S.)448).
- (2) *Naucoris* Geoffroy, 1762 (Class Insecta, Order Hemiptera), proposed validation of (Z.N.(S.)608).
- (3) *geoffroyi* Leach, 1817 (as published in the combination *Corixa geoffroyi* (Class Insecta, Order Hemiptera), proposed validation of (Z.N.(S.)609).

- (4) *quadratus* Fabricius, 1787 (as published in the combination *Cancer quadratus*) (Class Crustacea, Order Decapoda). possible suppression of (Z.N.(S.)271).
- (5) *Acmaea* Eschscholtz, 1833, proposed validation of, and suppression of *Acmea* Hartmann, 1821 (Class Gastropoda) (Z.N.(S.)27).
- (6) *Petalifera* Gray, 1847 (Class Gastropoda), possible validation of (Z.N.(S.)150).
- (7) *punctata* Cuvier, 1803 (as published in the combination *Aplysia punctata*) (Class Gastropoda). proposed validation of, by suppression of *rosca* Rathke, 1799 (as published in the combination *Aplysia rosca*) (Z.N.(S.)611).
- (8) *Ammonia* Brunnich, 1771 (Class Cephalopoda or Class Rhizopoda, Order Foraminifera), possible suppression of (Z.N.(S.)612).
- (9) *Enerchinus* Schulze, 1760 (Class Crinoidea). proposed validation of, with *Enerchinus liliformis* Lamarek, 1801. as type species (Z.N.(S.)434).
- (10) *Archaeocidaris* McCoy, 1844 (Class Echinoidea). proposed validation of (Z.N.(S.)320).
- (11) *Pholidocidaris* Meek & Worthen, 1869 (Class Echinoidea), proposed validation of (Z.N.(S.)435).
- (12) *Eriechinus* Pomel, 1883, and *Typhlechinus* Neumayr, 1889 (Class Echinoidea) (genera based upon misidentified type species) determination of type species of; suggested suppression of above names to validate *Lovenechinus* Jackson, 1912 (Z.N.(S.)613).
- (13) *Odobenus* Brisson, 1762 (Class Mammalia). proposed validation of; problem arising in connection with the name *Rosmarus* Brunnich, 1771 (Z.N.(S.)614).
- (14) *Chinchilla* Bennett, 1829 (Class Mammalia), determination of type species of; possible suppression of the name *laniger* Molina, 1782 (as published in the combination *Mus laniger*) (Z.N.(S.)141).

2. In accordance with the procedure agreed upon at the Session held by the International Commission on Zoological Nomenclature in Paris in 1948 (see 1950, *Bull. zool. Nomencl.* 4: 56), corresponding Notices have been sent to the journals "Nature" and "Science."

FRANCIS HEMMING

Secretary to the International Commission on
Zoological Nomenclature

Secretariat of the
International Commission on
Zoological Nomenclature,
28 Park Village East, Regent's Park,
LONDON, N.W.1, England.
15th April, 1952.

PRELIMINARY REPORT ON TWENTY-EIGHT INDIVIDUAL
NOMENCLATORIAL PROBLEMS REMITTED BY THE
INTERNATIONAL COMMISSION ON ZOOLOGICAL
NOMENCLATURE FOR SPECIAL INVESTIGATION:
REQUEST TO SPECIALISTS FOR ADVICE

By FRANCIS HEMMING, C.M.G., C.B.E.

(Secretary to the International Commission on Zoological Nomenclature)

(Commission's reference Z.N.(G.)53)

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Introductory

1. In addition to the seven general problems relating to the interpretation of the *Règles*, the possible recasting of certain existing provisions or the addition of new provisions, twenty-eight individual nomenclatorial problems were specifically referred by the International Commission on Zoological Nomenclature at its meeting held in Paris in 1948 to myself, as its Secretary, for investigation, in conjunction with interested specialists, and for Report. It is essential that the Reports asked for in regard to all these cases should be completed in time for the consideration by the International Commission at latest at its Session to be held in Copenhagen in 1953; I am most anxious, therefore, to engage the interest of specialists in these cases and to obtain assistance and advice from them in regard thereto as soon as possible. These cases were all specifically noted as cases which were to be subject to investigation in the *Official Record of the Proceedings of the International Commission* at its Paris Session published in 1950 in volume 4 of the *Bulletin of Zoological Nomenclature*; moreover, in order to draw attention to the procedure agreed upon in regard to them, a summary list of these cases was specially inserted in the index to the foregoing volume (1950. *Bull. zool. Nomencl.* 4: 750-751).

2. The purpose of the present Preliminary Report is to give particulars of the progress so far made in regard to these cases, to state briefly the issues involved in regard to the remainder, and to invite the help of specialists in the groups concerned in devising satisfactory solutions in regard to those problems on which Reports have yet to be prepared. For this purpose I have in the present Report grouped these cases, in the first place, by reference, to the stage already reached and the nature of the investigation involved, and in the second place, by reference to the groups within the Animal Kingdom to which are referable each of the taxonomic units, the name properly applicable to which is to form the subject of the investigations now to be undertaken.

(A) SIX CASES ON WHICH THE INVESTIGATION ASKED FOR HAS BEEN COMPLETED

Case 1: Status of names published in Oken (L.) [1815-1816], "Lehrbuch der Naturgeschichte"

(See 1950, *Bull. zool. Nomencl.* 4: 365-366)

(Commission's reference Z.N.(S.)153)

3. A comprehensive Report on the status of names, as published in 1815-1816 in the *Zoologic* volume of Lorenz Oken's *Lehrbuch der Naturgeschichte*, has been prepared in consultation with interested specialists and will be published in an early Part of the *Bulletin of Zoological Nomenclature*. In addition,

steps are being taken to obtain from specialists their views as to which of the Oken names ought, in the interest of stability and for the purpose of avoiding confusion, to be preserved with priority as from Oken in the event of its being decided that from the nomenclatorial standpoint Oken's *Lehrbuch* is not an acceptable work. It would be particularly helpful if specialists in as many groups as possible would co-operate with the Commission by sending statements of their views on the foregoing subject, so far as concerns names of genera and/or species in their own groups. Such information will be of great value, in whichever sense the International Commission answer the question raised in the present case, for, if it is decided that the *Lehrbuch* is an acceptable work, it will be possible at once to place on the *Official List* generic names so submitted by specialists.

Case 2 : Status of the generic name "Limulus" Müller (O.F.), 1785 (Class Merostomata)

(See 1950, *Bull. zool. Nomencl.* **4** : 311-312)

(Commission's reference Z.N.(S.)506)

4. The problem to be considered here is whether action should be taken under the plenary powers to prevent the very well-known generic name *Limulus* Müller (O.F.), 1785 (Class Merostomata) from being replaced by the hitherto virtually unused name *Xiphosura* Brünnich, 1771, found to be an available name as the result of the decision that in his *Zoologiae Fundamenta* of 1771 (in which this name was published) Brünnich satisfied the requirements of Proviso (b) to Article 25. A subsidiary question involved in the foregoing problem arises from the fact that as long ago as 1928 the name *Limulus* Müller was placed on the *Official List of Generic Names in Zoology*. A comprehensive statement of the issues involved in this case, with recommendations as to the action which it is desirable should be taken, has been submitted by Professor Leif Størmer (Oslo). This has now been published in the *Bulletin of Zoological Nomenclature* (1951, *Bull. zool. Nomencl.* **2** : 319-322); the proposals so submitted are supported by Professor Munro Fox (London University) (: 322) and by Dr. Carl O. Dunbar (Yale University) (: 323).

Case 3 : Status of the generic name "Orthoceros" Brünnich, 1771 (Class Cephalopoda, Order Nautiloidea)

(See *Bull. zool. Nomencl.* **4** : 312-313)

(Commission's reference Z.N.(S.)44)

5. The ruling that Brünnich's *Zoologiae Fundamenta* is a nomenclatorially acceptable work makes it necessary to reach a decision on the question whether the generic name *Orthoceros* Brünnich, 1771, should be brought into use or whether to do so would be likely to give rise to such confusion that the use by the Commission of its plenary powers would be called for. The problem so involved is bound up with the question of the treatment to be accorded to the well-known name *Orthoceras* Bruguière, 1789, on which a number of years

earlier an application had been submitted to the International Commission on Zoological Nomenclature by Dr. A. K. Miller (University of Iowa). In this case a comprehensive Report has been prepared in consultation with Dr. Miller, Dr. Curt Teichert (Melbourne, Australia), Dr. C. J. Stubblefield (Geological Survey and Museum, London) and others. This Report will be published, for the consideration of the Commission, in an early Part of the *Bulletin of Zoological Nomenclature*.

**Case 4 : Type species of the genus "Colymbus" Linnaeus, 1758
(Class Aves)**

(See 1950, *Bull. zool. Nomencl.* 4 : 361-363)

(Commission's reference Z.N.(S.)78)

6. The question of the species to be accepted as the type species of the genus *Colymbus* Linnaeus, 1758 (Class Aves) was submitted to the International Commission many years before the outbreak of the War of 1939-45, but no decision was ever reached thereon. At Paris the Commission agreed that a decision should be taken with the least possible further delay and asked for a Report discussing the problems involved in applying Article 30 in this case. Before this Report could be prepared, the ornithologists assembled at the International Ornithological Congress at Uppsala in June, 1950, set up a Standing Committee on Ornithological Nomenclature for the purpose of formulating proposals in regard to this and other cases for the consideration of the Commission. The Standing Committee has now submitted proposals in regard to this case and the paper so received will shortly be published in the *Bulletin of Zoological Nomenclature*, together with the Report asked for in Paris.

**Case 5 : Status of the generic name "Dama" Zimmermann, 1780, and of the trivial name "virginiana" Zimmermann, 1780
(as published in the binominal combination "Dama virginiana") (Class Mammalia)**

(See 1950, *Bull. zool. Nomencl.* 4 : 549-551)

(Commission's reference Z.N.(S.)96)

7. The problem raised by the generic name *Dama* Zimmermann, 1780, and by the trivial name *virginiana* Zimmermann, 1780 (as published in the binominal combination *Dama virginiana*) (Class Mammalia) was considered in Paris by the International Commission on Zoological Nomenclature, which, after concluding that the foregoing were available names, placed on record its view that confusion must be expected if the generic name *Dama* was to be transferred from the Fallow Deer of Europe to the Virginia Deer of America and asked that steps should be taken to consult interested specialists on the question whether the degree of confusion to be so expected was likely to be such that it would be desirable for the Commission to use its plenary powers to prevent that confusion from arising. A definite proposal on this subject has now been received from Mr. T. C. S. Morrison-Scott (British Museum (Natural History)); the application so submitted has since received support

from Dr. Karl P. Schmidt (Chief Curator of Zoology, Chicago Natural History Museum) and from Dr. Colin Campbell Samborn, Dr. D. Dwight Davis, Dr. Bryan Patterson and Dr. Rainer Zangeri (Curators respectively of Zoology, Mammals, Anatomy, Fossil Mammals, and Fossil Reptiles at the above Museum) and from Dr. Robert K. Enders (Swathmore College, Pennsylvania). Mr. Morrison-Scott's application and the comments on it will shortly be published in the *Bulletin of Zoological Nomenclature* for consideration by the International Commission.

**Case 6 : Status of the generic name "Manatus" Brünnich, 1771
(Class Mammalia)**

(See 1950, *Bull. zool. Nomencl.* 4 : 313)

(Commission's reference Z.N.(S.)515)

8. At its Session held in Paris in 1948 the International Commission on Zoological Nomenclature, after ruling that generic names published by Brünnich in 1771 in his *Zoologiae Fundamenta* possessed rights under the Law of Priority, decided that, in view of the risk that the application of this decision of principle might lead in individual cases to confusion or undesirable name-changing, each of the names concerned should be investigated separately in conjunction with interested specialists. One of the names so referred was the name *Manatus* Brünnich, 1771 (Class Mammalia). A Report on this case has now been completed and is being published in Part 5 of Volume 6 of the *Bulletin of Zoological Nomenclature* (pp. 159-160).

**(B) TWO CASES ARISING OUT OF DECISIONS TAKEN BY
THE INTERNATIONAL COMMISSION ON ZOOLOGICAL
NOMENCLATURE ON THE STATUS OF INDIVIDUAL
BOOKS**

**Case 7 : Question of the use of the plenary powers to validate
certain generic names in common use published in 1782 by
Etienne Louis Geoffroy in 1762 in his " Histoire abrégée des
Insectes qui se trouvent aux Environs de Paris "**

(See 1950, *Bull. zool. Nomencl.* 4 : 366-369.)

(Commission's reference Z.N.(S.)168)

9. At its Paris Session held in 1948, the International Commission ruled that in the *Histoire abrégée des Insectes qui se trouvent aux Environs de Paris* published in 1762 Geoffroy (E. L.) had not applied the principles of binominal nomenclature and therefore that, under the decision taken earlier during the Thirteenth International Congress of Zoology to amend Proviso (b) to Article 25 by substituting the words "nomenclature binominale" for the words "nomenclature binaire" (1950, *Bull. zool. Nomencl.* 4 : 63-66), the generic names published in the foregoing work were not available under the Law of

Priority. At the same time, however, the Commission placed on record its view that certain of the generic names published by Geoffroy in his *Histoire abrégée* were in such wide use that they should certainly be validated under the plenary powers under the procedure for ensuring that the smooth introduction of the amendment of Article 25 noted above prescribed by the International Congress of Zoology when making that amendment. The International Commission on Zoological Nomenclature accordingly agreed that steps should be taken to obtain views on this subject from specialists in the groups concerned.

10. Applications have been received under the foregoing invitation in respect of certain individual names but what is required, in order finally to dispose of the so-called "Geoffroy problem," is the systematic examination of the *Histoire abrégée*. Order by Order, followed by the submission to the Commission of proposals for the validation under the plenary powers of any names which specialists may consider it essential should be preserved if confusion is to be avoided and for the placing on the *Official Index of Rejected and Invalid Generic Names in Zoology* of all other generic names in the Order concerned that were first published in the *Histoire abrégée*. Entomologists who are specialists in the Orders dealt with by Geoffroy in the foregoing work are particularly asked to promote stability in the nomenclature in their respective groups by disposing of the Geoffroy problem once and for all by undertaking reviews of the names published in the *Histoire abrégée* along the lines suggested by the International Commission.

Case 8 : Determination of the genera to which are referable the species in the Order Lepidoptera (Class Insecta) which would have been the type species of the monotypical genera established in Jacob Hübner's "Tentamen" of 1806 if that leaflet had satisfied the requirements of Article 25

(See 1950, *Bull. zool. Nomencl.* **4** : 496)

(Commission's reference Z.N.(S.)314)

11. At its Session held in Paris in 1948 the International Commission on Zoological Nomenclature had under consideration the procedure to be adopted for the purpose of laying the ghost of the "Tentamen problem" which earlier in the present century had caused so much confusion in the generic nomenclature of the Order Lepidoptera (Class Insecta). The basic problem whether the terms used as the names of monotypical genera were acceptable as generic names as from the distribution of the *Tentamen* in 1806 was settled by the Commission's *Opinion* 97 published in 1926 (*Smithson misc. Coll.* **73** (No. 4) : 19-30), when the Commission ruled against the availability of the *Tentamen* for nomenclatorial purposes; this decision was clarified by the Commission in 1948 (1950, *Bull. zool. Nomencl.* **4** : 338) in preparation for its being entered in the Schedule to the *Règles* devoted to recording decisions of this kind.

12. But the foregoing decision on the general issue of principle involved could not in itself bring the *Tentamen* controversy to a close, for there remained

the question whether any, and, if so, which, of the *Tentamen* names had become so deeply entrenched in the literature that, in order to avoid confusion and undesirable name-changing, it would be desirable to invoke the Commission's plenary powers. Whether or not such action is necessary is a matter which can only be settled by specialists determining the generic position of each of the species cited by Hübner in the *Tentamen*; (1) Where that examination shows that one of those species is the type species of some nominal genus having an available name published later than the corresponding *Tentamen* name, it will be a matter for consideration whether that later name can be used for the genus concerned without causing confusion or alternatively whether the confusion involved would be such as to call for the use of the plenary powers to validate the *Tentamen* name concerned. (2) Where it is found that one of the nominal species cited by Hübner is not the type species of any later established nominal genus, it will be necessary to determine the genus to which on taxonomic grounds the species concerned is properly referable and, having done so, to consider whether confusion would result if the species concerned were to be referred to that genus and, if so, whether the confusion expected would be such as would justify the use of the plenary powers to validate the *Tentamen* name concerned.

13. The need for validating some of the *Tentamen* names in order to prevent confusion from arising was strongly urged by Professor Wm. T. M. Forbes (Cornell University, Ithaca) when I discussed this question with him in Washington in 1947 and his representations were reported to the Commission when it considered this matter in Paris some six months later. At the same time the Commission had under consideration an application on the lines indicated above in regard to all the species of butterflies, cited in the *Tentamen*, on the basis of which the Commission was able to conclude that there was no case for using its plenary powers to validate any of the names used in the *Tentamen* as generic names of butterflies. So far as the Sub-Order Rhopalocera is concerned, the Commission was therefore able completely to dispose of the last trace of the *Tentamen* controversy by placing the *Tentamen* names concerned on the *Official Index of Rejected and Invalid Generic Names in Zoology* and by placing on the *Official List of Generic Names in Zoology* the names of the genera to which the species cited in the *Tentamen* were referable, either objectively (because they were the type species of the genera concerned) or subjectively (because they were accepted by specialists as being congeneric with the type species of those genera) (see 1950, *Bull. zool. Nomencl.* **4**: 491-496).

14. In the absence of any concrete proposals it was not possible for the International Commission similarly to dispose of the *Tentamen* problem in relation to the names used for genera of moths in that leaflet. The Commission recognised the importance of securing with as little delay as possible a settlement for the Order Heterocera similar to that which it was able to secure in respect of the Sub-Order Rhopalocera and agreed for this purpose that specialists in the Heterocera should be urged to examine the *Tentamen* from the point of view indicated in paragraph 12 above and, having done so, to submit their conclusions to the Commission for consideration. Specialists in the Heterocera

are accordingly particularly asked to assist the Commission finally to dispose of the *Tentamen* problem by submitting applications of the kind indicated above.

**(C) THREE CASES ARISING OUT OF A SUBJECT WHICH
HAS BEEN DEALT WITH INCOMPLETELY IN A
PREVIOUSLY RENDERED "OPINION"**

Case 9 : Question whether the type species of certain nominal genera are to be treated as having been indicated by absolute tautonymy (question left unsettled in "Opinion" 16)

(See 1950, *Bull. zool. Nomencl.* 4 : 580-583)

15. At its Session held in Paris in 1948 the International Commission on Zoological Nomenclature had under consideration the situation created by the inconclusive discussion in *Opinion* 16 (1910, *Smithson Publ.* 1938 : 31-39) on the question whether the type species of the long list of nominal genera there enumerated were to be regarded as having been indicated by absolute tautonymy under Rule (d) in Article 30. In the case of two only of these generic names was a decision given in *Opinion* 16. At various later dates, however, decisions had been taken by the Commission in regard to a large number of the names concerned in *Opinions* in which those names had been placed on the *Official List of Generic Names in Zoology*. Nevertheless, at the time of the Commission's Paris Session there still remained twenty-seven names discussed in *Opinion* 16 on which no decision had ever been taken by the Commission.

16. In order to dispose of the unsatisfactory situation disclosed above, the Commission agreed that an investigation should be undertaken as soon as possible, in conjunction with interested specialists, for the purpose of determining, as regards each of the twenty-seven generic names referred to above, (1) whether it was an available name, (2) whether the species specified in *Opinion* 16 was currently accepted as being the type species of the genus concerned and (3) if so, whether that the generic name in question was both objectively and subjectively the oldest available name for the genus concerned. Further, the Commission agreed that in every case where this investigation showed (a) that the type species of a nominal genus cited in *Opinion* 16 was the species there so specified and (b) that the name of that genus was the oldest such name available (either objectively or subjectively) for the genus concerned, the generic name in question should be placed forthwith on the *Official List of Generic Names in Zoology*. Point (b) arises only in regard to one name (*Chaos* Linnaeus, 1767), all the others being names published in 1758 and belonging to very well-known genera. Of the twenty-seven names in question to be investigated, two are the names of mammals, twenty-two are the names of birds, two are the names of fishes and one is the name of a genus of Protozoa. The names in question are set out below :—

(a) Names of two genera of the Class Mammalia**(Commission's reference Z.N.(S.)275)**

17. The two names of genera of mammals which require to be investigated under the foregoing decision by the Commission are: (1) *Camelus* Linnaeus, 1758; (2) *Rhinoceros* Linnaeus, 1758.

(b) Names of twenty-two genera of the Class Aves**(Commission's reference Z.N.(S.)274)**

18. The twenty-two names of genera in the Class Aves which require to be investigated are all names published by Linnaeus in 1758. They are the following: (3) *Caprimulgus*; (4) *Certhia*; (5) *Charadrius*; (6) *Corvus*; (7) *Cuculus*; (8) *Fringilla*; (9) *Fulica*; (10) *Loria*; (11) *Meleagris*; (12) *Merops*; (13) *Motacilla*; (14) *Otis*; (15) *Pavo*; (16) *Pelecanus*; (17) *Phasianus*; (18) *Scolopax*; (19) *Sterna*; (20) *Strix*; (21) *Tetrao*; (22) *Tringa*; (23) *Upupa*; (24) *Vultur*.

(c) Names of two genera of the Class Pisces**(Commission's reference Z.N.(S.)276)**

19. The two names of genera in the Class Pisces are: (25) *Gymnotus*; (26) *Stromateus* (both of Linnaeus, 1758).

(d) The name of one genus in the Phylum Protozoa**(Commission's reference Z.N.(S.)277)**

20. The nominal genus in the Phylum Protozoa, the name of which requires to be investigated is *Chaos* Linnaeus, 1767.

21. *Request to specialists*; Specialists in the foregoing groups will greatly assist the International Commission if they will be so good as to furnish, for each of the names concerned, the information specified in paragraph 16 above.

Case 10: Question of the type species of the genus "Pleuronectes" Linnaeus, 1758 (question left unsettled in "Opinion" 68)(See 1950, *Bull. zool. Nomencl.* 4: 337)**(Commission's reference Z.N.(S.)606)**

22. When considering the incorporation into the appropriate Schedule to the *Règles* of decisions in regard to individual nomenclatorial cases taken in previously published *Opinions*, the International Commission on Zoological Nomenclature, at its Session held in Paris in 1948, decided that the incomplete decision in regard to the nominal genus *Pleuronectes* Linnaeus, 1758, given in *Opinion* 68 (1922, *Smithson misc. Coll.* 73 (No. 1): 1-8) (which, though entitled "The type species of *Pleuronectes* Linnaeus, 1758" (Class Pisces) did not deal

with that subject at all, merely stating that a given author (Fleming) on a given occasion (1828) did not select a type species for this genus) should be supplemented as soon as possible by a further *Opinion* specifying what is the type species of this genus and placing the name of that genus on the *Official List of Generic Names in Zoology*.

23. The Commission accordingly decided to invite the assistance of ichthyologists in preparing an application dealing with the foregoing subject. Advice on this subject will be greatly appreciated.

Case 11 : Question of the type species of the genus " Sparus " Linnaeus, 1758 (Class Pisces) (question left unsettled in " Opinion " 69)

(See 1950, *Bull. zool. Nomencl.* 4 : 337)

(Commission's reference Z.N.(S.)607)

24. When at Paris in 1948 the International Commission on Zoological Nomenclature considered *Opinion* 69 (1922, *Smithson misc. Coll.* 73 (No. 1) : 9-12), which was concerned with the generic name *Sparus* Linnaeus, 1758 (Class Pisces), it placed on record its view that this *Opinion* suffered from defects similar to those noted above (paragraph 22) in connection with *Opinion* 68, that is, that, although it was entitled " The type species of *Sparus* Linnaeus, 1758," it did not in fact deal with that subject at all, merely stating that " Fleming, 1828, 211 " did not select a type species for this genus. The Commission accordingly decided that *Opinion* 69 should be supplemented as soon as possible by a further *Opinion* specifying what is the type species of this genus and placing the name of this genus on the *Official List of Generic Names in Zoology*.

25. The Commission decided therefore to invite the assistance of ichthyologists in preparing an application dealing with the foregoing subject. Advice on this subject will be greatly appreciated.

(D) ONE CASE CONCERNED WITH THE NOMENCLATORIAL STATUS OF A BOOK

Case 12 : Question of the nomenclatorial status of Brisson (M. J.), 1762, " Regnum Animale " (ed. 2)

(See 1950, *Bull. zool. Nomencl.* 4 : 313-314)

(Commission's reference Z.N.(S.)124)

26. The question of the status of names published in 1762 in the second edition of M. J. Brisson's *Regnum Animale* was first brought before the International Commission on Zoological Nomenclature in an application submitted by Dr. G. H. H. Tate (American Museum of Natural History, New

York). The problem here is similar to that raised by the same author's *Ornithologia* of 1760, namely whether Brisson applied the principles of binominal nomenclature. In the case of the *Ornithologia* (a work which includes a large number of generic names in common use) the foregoing question was answered in the negative in 1948 by the Commission which, however, at the same time used its plenary powers to validate that work for nomenclatorial purposes (1950, *Bull. zool. Nomencl.* 4: 65-66). No answer has as yet been given by the Commission as regards the *Regnum animale*. If, however, that question were to be answered in a sense similar to that of the reply given as regards the *Ornithologia*, it would at once be necessary to consider which of the generic names for mammals published in the *Regnum Animale* ought to be validated under the plenary powers, if serious confusion and extensive name-changing was to be avoided. For a further discussion of the problems arising in connection with names published in 1762 in the Second Edition of Brisson's *Regnum animale*, see also paragraphs 69-72 of the present Report, where this subject is considered in relation to the generic names *Odobenus* Brisson, 1762, and *Rosmarus* Brännich, 1771.

27. Mammalogists are accordingly particularly invited to notify to the Commission which of the generic names in Brisson's *Regnum Animale* of 1763 ought, in their view, to be preserved if it were to be found that that work does not satisfy the requirements of Proviso (b) to Article 25 as amended in 1948 by the Paris Congress, i.e., if it were to be ruled by the International Commission that Brisson did not consistently apply the principles of binominal nomenclature in the above work.

**(E) ONE CASE CONCERNED WITH THE RELATIVE
PRIORITY TO BE ASSIGNED TO CERTAIN BOOKS
DEALING WITH THE SAME SUBJECT AND PUBLISHED
ON UNKNOWN DATES IN THE SAME YEAR**

**Case 13 : Relative priority to be accorded to names published
for butterflies in 1775 in certain books and papers (a) by Pieter
Cramer ; (b) by J. N. C. M. Denis & Ignaz Schiffermüller ; (c)
by Johann Christian Fabricius, and (d) by S. A. von Rottemburg**

(See 1950, *Bull. zool. Nomencl.* 4: 459)

(Commission's reference Z.N.(S.)448)

28. At its Session held in Paris in 1948 the International Commission on Zoological Nomenclature recommended, and the Thirteenth International Congress of Zoology agreed, that there should be added to the *Règles* a provision that, where, under the Articles then agreed to be so inserted for the purpose of determining the dates of publications of books containing new zoological names (1950, *Bull. zool. Nomencl.* 4: 223-225), it was impossible to ascertain which of any two books or papers had been published, or was to be deemed to have been published, before the other, the question was to be referred to the International Commission for decision (1950, *ibid.* 4: 257). Later during the

same Session the Commission agreed to take such a decision after consultation with specialists for the purpose of settling the hitherto insoluble problem in the nomenclature of the Order Lepidoptera (Class Insecta) presented by four works, each containing new names of butterflies and moths, published in the year 1775.

29. The works in question are: (1) the eight Parts in which the first volume of Pieter Cramer's *Uitlandsche Kapellen* was published; (2) the celebrated work commonly known as the "Wiener Verzeichniss", published anonymously by J. N. C. M. Denis and Ignaz Schiffermüller under the title *Ankündigung eines systematischen Werkes von den Schmetterlingen der Wiener-gegend*; (3) the well-known *Systema Entomologiae* of Johann Christian Fabricius; (4) the important paper entitled *Anmerkungen zu den Hufnagelischen Tabellen der Schmetterlinge* by S. A. von Rottemburg published in the serial publication *Naturforscher* (volume 6, pp. 1-34; vol. 7, pp. 105-112). The importance of reaching a decision on the foregoing matter is due partly to the fact that in the above works different names are published for the same species (thus raising the question of how to apply the Law of Priority) and the same names given to different species (thus raising the question of how to apply the Law of Homonymy).

30. The views of interested specialists as to the best way in which to settle the foregoing question, i.e. how to settle this question with the minimum of interference with current nomenclatorial practice, will be extremely welcome to the International Commission. Being myself an interested specialist in this particular matter, I should like tentatively to submit the following considerations:—(1) It will never be possible to establish with certainty the relative dates of publication of the foregoing works by Denis & Schiffermüller and by Fabricius and of the various parts in which the first volume of Cramer's *Uitlandsche Kapellen* and the first two instalments of Rottemburg's *Anmerkungen* were published and, therefore, until a definite decision is taken by the International Commission under the powers specially conferred upon it by the International Congress of Zoology for settling cases of this kind, it will remain impossible to stabilise the nomenclature of those species for which new names were published in two or more of the foregoing works in those cases where it is necessary to reach a conclusion as to the application of the Law of Priority or of the Law of Homonymy in relation to such names; (2) For the foregoing reasons it is highly desirable that the long-standing confusion and instability which has resulted from the impossibility of determining the relative priority to be accorded to the competing names concerned should be brought to an end by a decision by the Commission as to the relative priority to be accorded to the four works with which we are concerned. (3) Since any such decision would have to be based upon considerations other than actual dates of publication (which, as already explained, it is impossible to ascertain), it would be possible, when settling the order of relative priority to be adopted, to pay regard to other criteria of value in the determination of the species concerned. The provision I have particularly in mind is the provision of an adequately defined and sufficiently restricted type locality, this being a matter of great importance at the subspecies level in the case of polytypic species, such as are most of those with which we are here concerned. From this point of view Denis & Schiffer-

müller's *Ankündigung* stands out pre-eminently by reason of the information (provided in the title) that the species described therein were all from the "Wienergegend"; next comes Rottemburg's *Anmerkungen*, which also contains good indications in regard to type localities, accompanied in some cases by plates which (judged by the standards of the time) must be considered quite good. Judged by the foregoing standards Cramer's *Uitlandsche Kapellen* would come next, for, although the localities given refer normally to countries only and not to places, they are usually to be relied upon and are moreover supplemented by coloured plates. From every point of view the *Systema* of Fabricius is the least satisfactory of the books with which we are here concerned; it has no plates; the Latin descriptions are very brief; the citation of bibliographical references to earlier works at times adds to the difficulties of identification (at least at the subspecies level); the localities cited are lacking in precision. For the reasons summarised in (3) above, I would suggest for the consideration of my colleagues that the order of priority which would be calculated to give the most satisfactory results would be:—(a) Denis & Schiffermüller; (b) von Rottemburg; (c) Cramer; (d) Fabricius. While a settlement on the foregoing basis would, I believe, in general prove superior to any other, individual cases would, no doubt, arise where such an order of priority would give priority to the less important of some given pair of names, but this would be inevitable whatever order of priority was adopted. It is suggested, therefore, that, if this were to happen in any case where confusion would be likely to result, the situation should be remedied by invoking the use of the Commission's plenary powers.

31. It is particularly hoped that, in order that a satisfactory settlement may be reached in regard to the long-outstanding difficulty discussed above, lepidopterists will be good enough to furnish the Commission with their views as to the action which it is desirable should now be taken. It will be of great assistance if, in commenting on this problem, specialists will be so kind as to give particulars of any cases of which they may be aware (1) where the same species has been given two or more names in the books and papers here under consideration or (2) where a new name given to a species in any of the above works is a homonym of another name given to some other species in another of these works.

(F) FIFTEEN CASES RELATING TO INDIVIDUAL NAMES

Case 14 : Species to which the trivial name "annulatum" commonly treated as having been published by Dschunkowsky & Luhs in 1904 (in the combination "*Piroplasma annulatum*") (Class Sporozoa, Order Coccidiida) is to be treated as applicable

(See 1950, *Bull. zool. Nomencl.* 4 : 431-433)

(Commission's reference Z.N.(S.)122)

32. The question of the species of the Order Coccidiida (Class Sporozoa) to which is applicable the trivial name *annulatum* commonly treated as having been published by Dschunkowsky & Luhs in 1904 in the combination *Piroplasma annulatum* was submitted to the International Commission on Zoological Nomenclature by Dr. G. Witenberg (Hebrew University, Jerusalem) in an application which was published in the *Bulletin of Zoological Nomenclature* in 1947 (Witenberg, 1947, *Bull. zool. Nomencl.* **1**: 223-224). In the course of preparing this application for submission to the Commission, in my capacity as Secretary to the Commission, I established that the name *Piroplasma annulatum* was not published in the paper by Dschunkowsky & Luhs which appeared in 1904 and which was always cited in the literature as the place where this name was first published. In spite of extensive correspondence with specialists on the subject, I was not able definitely to establish when and where this name was first published with an indication, though I did form an opinion as to the place where it probably first appeared. The foregoing investigations formed the subject of my Report which was published at the same time as Dr. Witenberg's application (Hemming, 1947, *Bull. zool. Nomencl.* **1**: 234-236).

33. Dr. Witenberg's application and my Report were considered by the International Commission on Zoological Nomenclature at its Session held in Paris in 1948; the Commission then took a decision on the question submitted by Dr. Witenberg, but agreed to postpone for a short time rendering an *Opinion* on this subject, in the hope that further efforts might elicit information throwing light on the question of the place where the name *Piroplasma annulatum* was first published and the date on which it was first published. The publication in 1950 of the foregoing decision has not, however, brought any fresh information to light on this subject. Clearly the formal promulgation of the Commission's decision on the question submitted by Dr. Witenberg cannot be allowed much longer to be held up for the sake of investigations as to the date and place of first publication of the foregoing name. In order, however, to exhaust every possible means of obtaining information on this subject, this case is included in the present Report in the hope that there may be some protozoologist or other zoologist or some veterinary specialist who may be able to throw some additional light on this question.

Case 15 : Question whether it is desirable, in the interest of stability and to avoid confusion, to validate the generic name "Naucoris" Geoffroy, 1762 (Class Insecta, Order Hemiptera) under the plenary powers

(See 1950, *Bull. zool. Nomencl.* **4**: 370)

(Commission's reference Z.N.(S.)608)

34. When at Paris in 1948 the International Commission on Zoological Nomenclature decided that in the *Histoire abrégée des Insectes qui se trouvent aux Environs de Paris* Geoffroy had not applied the principles of binominal

nomenclature, as required by Proviso (b) to Article 25 as then amended by the International Congress of Zoology (see 1950, *Bull. zool. Nomencl.* **4** : 63-66), the Commission placed on record its view that it was desirable that certain of the generic names published in the above book should be validated under the plenary powers in order to prevent the confusion which would otherwise ensue and invited myself, as its Secretary, to consult with specialists on this subject (see 1950, *Bull. zool. Nomencl.* **4** : 366-369 and also paragraphs 9 and 10 of the present Report). In the ensuing discussion the International Commission validated forthwith one of the generic names in question (*Corixa* Geoffroy), full particulars of that case having already been submitted to it by Professor H. B. Hungerford (University of Kansas) (see 1947, *Bull. zool. Nomencl.* **1** : 258-259 ; 1950, *ibid.* **4** : 369). In the same discussion the view was expressed by Professor Robert L. Usinger (an Alternate Commissioner) that similar action was desirable in the case of the generic name *Naucoris* Geoffroy, 1762. As a full statement of the facts relating to this name was not available at that time, it was decided that consideration should be given as soon as practicable after the close of the Paris Session to the question whether the foregoing generic name should be validated under the plenary powers, and, if so, what species should be selected as the type species of this nominal genus.

35. In order to give effect to the desire expressed by the Commission that the question whether the generic name *Naucoris* Geoffroy, 1762, should be preserved under the plenary powers should be settled as quickly as possible, hemipterists are invited to notify the Commission of their views on this question and on the associated question of the species to be accepted as the type species of this nominal genus if the name *Naucoris* is to be preserved.

Case 16 : Question whether " *Corixa geoffroyi* " Leach, 1817, is the oldest name, available either subjectively or objectively, for the species so named

(See 1950, *Bull. zool. Nomencl.* **4** : 369-370)

(Commission's reference Z.N.(S.)609)

36. As already noted (paragraph 34 above) the International Commission on Zoological Nomenclature, when considering the problems raised by the conclusion that Geoffroy's *Histoire abrégée* of 1762 was not a binominal work, decided forthwith to use its plenary powers to validate the generic name *Corixa* Geoffroy, 1762. In taking this action, it was necessary for the Commission to designate the species to be treated as the type species of this genus. In his application to the Commission on this subject, Professor H. B. Hungerford, after pointing out that some authors had accepted as the type species of this genus the nominal species *Notonecta striata* Linnaeus, 1758 (*Syst. Nat.* (ed. 10) **1** : 439) which alone had been cited by Geoffroy under the generic name *Corixa*, while others had accepted as the type species the species which had been figured by Geoffroy under the name *Corixa* but to which Geoffroy had not applied a binominal name ; later that species had been given the name *Corixa geoffroyi* by Leach in 1817 (*Trans. linn. Soc. Lond.* **12** (1) : 17) (Hungerford, 1947, *Bull. zool. Nomencl.* **1** : 258-259). Later in the same application

Professor Hungerford drew attention to the fact that Dr. W. E. China (British Museum (Natural History)) had in 1938 (*Ent. mon. Mag.* **74**: 34-39) identified the taxonomic species represented by the nominal species *Corixa geoffroyi* Leach, 1817, with that represented by the earlier nominal species *Sigara punctata* Illiger, 1807 (in *Faun. etrusc.* (ed. 2): 354). At the conclusion of his application, Professor Hungerford expressed the hope that the name *Corixa* Geoffroy, 1762, would be accepted as an available name with *Corixa geoffroyi* Leach, 1817, as type species.

37. When validating the name *Corixa* Geoffroy, 1762, the International Commission itself designated under the plenary powers the nominal species *Corixa geoffroyi* Leach, 1817, to be the type species of this genus. In view, however, of the claims which had been advanced by Dr. China that the name *Corixa geoffroyi* Leach, 1817, was a subjective synonym of *Sigara punctata* Illiger, 1807, the International Commission decided to defer taking a decision on the question whether the trivial name *geoffroyi* Leach, 1817 (as published in the binominal combination *Corixa geoffroyi*) should be placed on the *Official List of Specific Trivial Names in Zoology* until after further consideration had been given to the question whether that name is the oldest trivial name, available either objectively or subjectively, for the species in question. At the same time the Commission charged me in my capacity as Secretary to the Commission with the duty of presenting a Report on this subject as soon as the general wishes of interested specialists had been ascertained.

38. In accordance with the instructions issued by the International Congress of Zoology, the International Commission is bound in a case of this kind to place on the *Official List of Specific Trivial Names in Zoology* either (1) the trivial name *geoffroyi* Leach, 1817 (as published in the binominal combination *Corixa geoffroyi*) (as the trivial name of the type species of the genus *Corixa* Geoffroy) or (2) if, in the opinion of specialists, that trivial name is not the oldest trivial name available, either objectively or subjectively, for the species in question, whatever trivial name is so considered by specialists. If in any case it is a matter of disagreement among specialists as to whether the trivial name of the type species of a given nominal genus (in this case, the trivial name *geoffroyi* Leach) is the oldest available name for the species in question with a consequent prospect of continued instability and confusion, it would be possible for the Commission, if specialists so desired, to suppress the older and less well-known of the competing trivial names. It is on these questions that the views of hemipterists are now invited.

Case 17: Question of the trivial name to be accepted as the trivial name of the Sand Crab (Class Crustacea, Order Decapoda)

(See 1950, *Bull. zool. Nomencl.* **4**: 573-580.)

(Commission's reference Z.N.(S.)271)

39. In Paris in 1948 the International Commission on Zoological Nomenclature reviewed the subjects dealt with in its *Opinion* 13 (1910, *Smithson.*

Publ. 1938 : 22-24), an *Opinion* in which (in accordance with the practice of that day) no definitive decision was given, the decision reached being expressly recorded as being given "under the premises submitted." In the light of the information before it at the time of this review the International Commission cancelled *Opinion 13* and, so far as concerns the portion of that *Opinion* which related to the question of the trivial name of the Sand Crab, ruled (1) that the trivial name *quadratus* Fabricius, 1787 (as published in the binominal combination *Cancer quadratus*), a name given to the Sand Crab, was an available name, (2) that, before it decided whether or not to correct the error in regard to this matter contained in *Opinion 13*, i.e., before deciding whether to render an *Opinion* ruling that the name *quadratus* Fabricius, 1787, was the oldest available such name and was therefore to be used in preference to the name *albicans* Bosc, [1801-1802] (as published in the binominal combination *Ocypoda albicans*) (the name incorrectly stated in *Opinion 13* to be the oldest trivial name for the Sand Crab), interested specialists should be consulted on the question whether instability and confusion would be likely to ensue if the decision taken in 1910 in the foregoing *Opinion* were now to be reversed by the adoption of the name *quadratus* Fabricius, 1787, as the name for the Sand Crab. The Commission further decided that, if specialists were of the opinion that the foregoing results would accrue, the plenary powers should be used to suppress the trivial name *quadratus* Fabricius and to validate the trivial name *albicans* Bosc, but that, if specialists were of the opinion that the foregoing adverse results were not to be expected, the trivial name *quadratus* Fabricius, 1787, should be placed on the *Official List of Specific Trivial Names in Zoology*.

40. The views of interested carcinologists are particularly requested as to the relative advantages of the two courses set out above, in order that, this aspect of the question having been settled, an *Opinion* may be rendered in accordance with the decision taken by the International Commission at its Paris Session.

**Case 18 : Question of the relative status of the generic names
"Acmea" Hartmann, 1821, and "Acmaea" Eschscholtz, 1833
(Class Gastropoda)**

(See 1950, *Bull. zool. Nomencl.* 4 : 389-392.)

(Commission's reference Z.N.(S.)27)

41. At its Session held in Paris in 1948 the International Commission on Zoological Nomenclature had under consideration an application submitted by Mrs. Avery R. Test (formerly Avery R. Grant) (University of California) on the subject of the relative status of the generic names *Acmea* Hartmann, 1821, and *Acmaea* Eschscholtz, 1833 (Class Gastropoda) from the point of view of the Law of Homonymy. Subsequent to the receipt of Mrs. Test's application but prior to the Paris Session of the Commission, a detailed communication in regard to this case had been received from Mr. Joshua L. Bailly, Jr. (San Diego, California), from which it became clear that, contrary to the view expressed by Mrs. Test in her application and by other authors who had previously discussed this matter, the name *Acmea* Hartmann, 1821, was not

an emendation by Hartman of the name *Acme* published by Hartmann in the same volume (and in the same year), but was the name given by that author to a separately established nominal genus, having the nominal species *Acmea truncata* Hartmann, 1821, as its type species (by selection by Iredale in 1915), whereas the nominal genus *Acme* Hartmann, 1821, had as its type species the nominal species *Bulimus lineatus* Draparnaud, 1801 (by monotypy).

42. In the consideration of this case the International Commission took the view (1) that it was likely that there would be continued confusion if two such similar words as *Acmea* and *Acmaca* were to be used as the names of genera within a single Class (Class Gastropoda) and (2) that great confusion would arise from the substitution of the name *Acmea* Hartmann, 1821, for the well-known and widely used name *Truncatella* Risso, 1826 (the name of a nominal genus having as its type species a nominal species (*Truncatella laevigata* Risso, 1821) which is subjectively identified with *Cyclostoma truncatulum* Draparnaud, 1801, with which also is synonymised *Acmea truncata* Hartmann, 1821, the name of the nominal species which is the type species of *Acmea* Hartmann, 1821). The Commission accordingly decided to put before specialists for consideration the suggestion that the name *Acmea* Hartmann, 1821, should be suppressed under the plenary powers, thus simultaneously removing the risk of confusion arising from the concurrent use in the Class Gastropoda of the words *Acmea* and *Acmaca* as generic names and providing a valid basis for the continued use of the generic name *Truncatella* Risso, 1826. The Commission further ruled that, pending the proposed consultation with specialists, the name *Truncatella* Risso, 1826, was not to be replaced by the name *Acmea* Hartmann, 1821, the whole problem to be regarded as being *sub judice*.

43. It is desired by the Commission that a definite decision on this case, which for so long has been a cause of difficulty and confusion, should be reached with as little further delay as possible. Specialists are therefore particularly asked to furnish the Commission as quickly as possible with their comments on the Commission's suggestion, as set out in the preceding paragraph.

Case 19: Question of the relative advantages of using the generic names "Petalifera" Gray, 1847, and "Aplysiella" Fischer, 1872 (Class Gastropoda) for the genus so named

(See 1950, *Bull. zool. Nomencl.* 4: 387-389.)

(Commission's reference Z.N.(S.)150)

44. The International Commission on Zoological Nomenclature at its Session held in Paris in 1948 had under consideration an application submitted by Dr. H. Engel (Zoologisch Museum, Amsterdam) for a ruling on the question whether the generic name *Petalifera* Gray, 1847 (Class Gastropoda) was an available name (with *Aplysia petalifera* Rang, 1828, as type species, by absolute tautonymy) and should therefore be used in preference to the name *Aplysiella*

Fischer, 1872. In the discussion which ensued it was pointed out that, as the name *Petalifera* Gray had been published as a synonym of the name *Dolabrifera* (a name first published on the same occasion), the question of the species to be accepted as the type species of the nominal genus *Petalifera* was one which could not appropriately be determined, pending the outcome of the inquiry which the Commission had already agreed (1950, *Bull. zool. Nomencl.* 4: 351-352) should be undertaken.* At the same time the Commission gave consideration to the question whether, if ultimately the name *Petalifera* Gray were found to be an available name, its use in place of the name *Aplysiella* Fischer would be likely to give rise to confusion; it was explained that, as the present was one of the oldest of the applications awaiting attention, it was possible that, although the name *Aplysiella* Fischer was, it appeared, the name generally used at the time when this application had been submitted, the practice of specialists in this matter might have changed during the intervening period. This was a matter on which, it was generally felt, it was desirable to obtain an up-to-date statement.

45. The International Commission accordingly agreed that, without prejudice to the general question whether a name published in the manner in which Gray had published the name *Petalifera* and in anticipation of the decision on the general question of the species to be accepted as the type species of a nominal genus, the name of which was first published as a synonym of some other generic name, steps should be taken to ascertain from specialists whether the substitution of the name *Petalifera* Gray, 1847, for the name *Aplysiella* Fischer, 1872, if that were found to be required under the *Règles*, would be likely to give rise to confusion in the nomenclature of the group concerned. This is the question on which the views of specialists are therefore now invited.

Case 20 and Case 21 : Future status to be accorded to the trivial names "fasciata" Poiret, 1789 (as published in the binominal combination "*Aplysia fasciata*") and "punctata" Cuvier, 1803 (as published in the binominal combination "*Aplysia punctata*") (Class Gastropoda)

(See 1950, *Bull. zool. Nomencl.* 4: 301-304)

(Commission's references Z.N.(S.)610 ("fasciata") and 611 ("punctata"))

46. At its Session held in Paris in 1948 the International Commission on Zoological Nomenclature had under consideration an application submitted by Dr. H. Engel (Zoologisch Museum, Amsterdam) for the use of the plenary powers for the purpose of determining the future use of the generic names *Tethys* and *Aplysia*, each of which had been used by some authors for a well-known genus of Tectibranchs and by other authors for an equally well-known genus of Nudibranchs. All cases of this kind turn upon what species should under the *Règles* be recognised as the type species of the nominal genus concerned. The present case is greatly complicated however by doubts regarding the taxo-

*See pp. 109-118 of the present Volume

nomie species represented by the various nominal species concerned and by the existence of several nominal species which are either unrecognisable or bear trivial names which, despite their undoubted rights under the Law of Priority, are not in use and have virtually never been used. The present problem was originally brought to the attention of the International Commission by the inclusion of the names in question in the list of suggested *nomina conservanda* brought forward by the late Commissioner Karl Apstein (Berlin) but rejected by the Commission on the ground that the plenary powers could not be used for validating long lists of names submitted *en bloc*, it being necessary to submit each such case individually with adequate supporting data (see *Opinion 74*, published in 1922, *Smithson. misc. Coll.* **73** (No. 1): 32-34). Later, the names were in fact so submitted by Dr. Engel but, as at that time the Commission possessed no means of giving publicity for so long a paper as that prepared by Dr. Engel, it was arranged that as a first step that paper should be published elsewhere. Under this arrangement Dr. Engel's application was published under the title "On the names of the genera *Tethys* and *Aplysia*" in 1936 (Engel, 1936, *Temminckia* **1**: 221-266). In that application Dr. Engel submitted proposals, involving an extensive use of the plenary powers; these proposals dealt with (1) the stabilisation of the names *Tethys* and *Aplysia* and the designation, as the respective type species of those genera, of species in harmony with current usage, and (2) the determination of the trivial names to be used for the three Tectibranch species and the one Nudibranch species involved in this complex problem. The greater part of the subject dealt with in Dr. Engel's application formed the subject of decisions taken by the International Commission at its Paris Session, but two of the constituent problems were then left over for further consideration. The purpose of the present note is to draw the attention of interested specialists to the two problems which the Commission at Paris referred back for further consideration, and, in accordance with the decision taken in Paris, to seek the views of specialists as to the solution which it is desirable should be adopted in regard to these names.

47. The history of the names given to, and used by later authors for, each of the four species (three Tectibranchs and one Nudibranch) involved in the *Tethys/Aplysia* problem is set out in great detail in Dr. Engel's *Temminckia* paper, to which reference is necessary for the purpose of examining the full bibliographical history of the two names with which the present inquiry is concerned. We have first to note that in Paris the International Commission used its plenary powers for the purpose of determining the name to be used for the first of the three Tectibranch species dealt with in Dr. Engel's paper (which we may conveniently refer to as Species T.1) and for the Nudibranch species (here called species N.1). Under that decision the name *Aplysia depilans* Gmelin, 1791, became the correct name for species T.1, the species so named becoming the type species of the genus *Aplysia* Linnaeus, 1767, while the name *Tethys fimbria* Linnaeus, 1767, became the correct name for species N.1, the species so named becoming the type species of the genus *Tethys* Linnaeus, 1767 (the name *Tethys* Linnaeus, 1758, being at the same time suppressed under the plenary powers). The two species, the names for which were left over for further consideration were the species T.2 and the species T.3. It is the names to be used for these species that the present Report is concerned to

ascertain. The data submitted to the Commission on this subject are briefly summarised in the following paragraphs.

48. *The name to be used for the Tectibranch species "T.2"*: Dr. Engel pointed out in his application (: 246) that the nominal species *Aplysia depilans* Linnaeus, 1767, was, when its name was first published, a nominal species comprising both species T.1 and species T.2. The existence of species T.2, as a species, distinct from species T.1, was however recognised by Poiret, who in 1789 applied to it the name *Lapylsia* [recte *Apylsia*] *fasciata* (Poiret, 1789, *Voy. Barbarie* 2: 2). In the following year Gmelin (1790, in Linnaeus, *Syst. Nat.* (ed. 13) 1: 3103) adopted the trivial name *fasciata* Poiret, 1789, for species T.2, while (on the same page) applying the trivial name *depilans* Linnaeus, 1767 (as published in the binominal combination *Lapylsia depilans*) exclusively to species T.1. Gmelin's treatment of the trivial name *depilans* Linnaeus as the name for species T.1 was, Dr. Engel noted (: 246), followed by all subsequent authors (in 111 publications at the time when Dr. Engel's application was written); but there was unfortunately no such unanimity in the subsequent practice followed as to the name to be applied to species T.2. From the full particulars given by Dr. Engel (: 245-246) it appears that in the period from 1790 up to the date on which Dr. Engel's application was compiled (a period of about 145 years) there are 116 references to species T.2 in the literature; in these this species was referred to under the trivial name *fasciata* Poiret 1789, on sixty-one occasions, was misidentified as *limacina* Linnaeus, 1758 (i.e. the nominal species *Tethys limacina* Linnaeus, 1758) on fifty-one occasions; and was identified on four occasions with *Tethys leporina* Linnaeus, 1758, and therefore called by the trivial name *leporina*. Elsewhere in his application (: 246-247) Dr. Engel drew attention to the large number of occasions on which the trivial name *leporina* Linnaeus, 1758, had been applied to the Nudibranch species N.1, and asked that, in view of the confusion which would attend the continued use of that trivial, the International Commission should use its plenary powers to suppress it. Dr. Engel concluded therefore that the trivial name *fasciata* Poiret, 1789, which had been used for species T.2 by the majority of the authors who had published papers dealing with the species concerned (61 references as against 55 papers in which either the name *limacina* or the name *leporina* had been used), was the oldest available trivial name, and the most widely used trivial name, for this species. Dr. Engel accordingly asked the International Commission formally to recognise the trivial name *fasciata* Poiret, 1789, as the correct name for species.

49. *The name to be used for the Tectibranch species "T.3"*: Dr. Engel pointed out (: 246) that, as first noted by Odhner (in 1907), the oldest available name for species T.3 was *Aplysia rosea* Rathke, 1799 (*Skr. Nat. Selsk.* 5(1): [85], 147) but that the great majority of subsequent authors (92 papers) had used the name *Lapylsia punctata* Cuvier, 1803 (*Ann. Mus. Hist. nat.*, Paris 2(10): 310); Dr. Engel added that there were some trivial names of later date which were subjective synonyms of *punctata* Cuvier but these had been used by only a few authors and had been dropped as soon as their synonymy with *punctata* Cuvier had been established. Dr. Engel accordingly asked for an *Opinion*

prescribing the use of the name *punctata* Cuvier in place of the name *rosea* Rathke as the trivial name of species T.3.

50. Questions put to specialists for advice ; When we compare the position as regards the names *Laplysia* [recte *Aplysia*] *fasciata* Poiret, 1789, and *Aplysia punctata* Cuvier, 1804 ; as submitted to the International Commission by Dr. Engel (as summarised in paragraphs 48 and 49 above) with the decisions taken by the Commission at its Paris Session (1950, *loc. cit.* 4 : 303), we find : (1) that the decisions then taken to suppress all uses of the trivial names *leporina* and *limacina* in the genus *Tethys* leave the trivial name *fasciata* Poiret, 1789 (as published in the combination *Laplysia* [sic] *fasciata*) as indisputably the oldest available name for the species T.2 ; (2) that none of the decisions taken in Paris have any bearing on the status to be accorded to the trivial name *punctata* Cuvier, 1803, in relation to the species T.3. On the basis of the information supplied by Dr. Engel there appears to be strong grounds in favour of the use of the plenary powers (as proposed in the application) for the purpose of suppressing the long-neglected (and not currently used) trivial name *rosea* Rathke, 1799 (as published in the combination *Aplysia rosea*), thereby making the trivial name *punctata* Cuvier, 1804 (as published in the combination *Aplysia* [sic] *punctata*) the name which is currently applied to the species T.3 and which has been almost consistently so applied ever since 1803, the oldest trivial name available, either subjectively or objectively, for that species. To sum up (a) there no longer seems to be any point of substance to put to specialists as regards the trivial name to be used for the species T.2 and the question now put to specialists is therefore whether there is any reason not so far brought to light why the trivial name *fasciata* Poiret, 1789, should not now be stabilised as correct trivial name for the species T.2 by being placed on the *Official List of Specific Trivial Names in Zoology* ; (b) as regards the species T.3, the question now put to specialists is whether it is desirable that the trivial name *rosea* Rathke, 1799, should be suppressed under the plenary powers, in order to render the customary name *punctata* Cuvier, 1803, the oldest available name for the species T.3.

Case 22 : Question of the status to be accorded to the generic name " Ammonia " Brünnich, 1771 (Class Cephalopoda or Class Rhizopoda, Order Foraminifera)

(See 1950, *Bull. zool. Nomencl.* 4 : 313)

(Commission's reference Z.N.(S.)612)

51. When (as explained in paragraph 8 of the present Report) the International Commission on Zoological Nomenclature ruled in Paris in 1948 that in the *Zoologiae Fundamenta* of 1771 Brünnich had applied the principles of binominal nomenclature and therefore that new names published in that work possessed rights under the Law of Priority it gave preliminary consideration to the status to be accorded to the new names concerned. One of these names was *Ammonia* Brünnich, 1771 (*Zool. Fund.* : 246), and it is as regards the treatment to be accorded to this name that the advice of specialists (in the Cephalopoda and Foraminifera) are now sought.

52. In the original application submitted to the International Commission in regard to the status of names in Brünnich's *Fundamenta*, the late Mr. R. Winckworth (1945, *Bull. zool. Nomencl.* 1: 116) gave his reasons for considering that the species eligible for selection as the type species of *Ammonia* Brünnich were (a) *Nautilus spirula* Linnaeus, 1758, and (b) *Nautilus beccarii* Linnaeus, 1758. These being the first nominal species to be placed in the genus *Ammonia* Brünnich, are, under the decision taken in 1948 by the Thirteenth International Congress of Zoology when codifying the ruling given in the Commission's *Opinion* 46 (1950, *Bull. zool. Nomencl.* 4: 159-160, 346), the only nominal species eligible for selection as the type species of *Ammonia* Brünnich. As Mr. Winckworth pointed out, the selection of *Nautilus spirula* Linnaeus as the type species of this genus would inevitably cause great confusion, for it would involve the sinking of the extremely well known name *Spirula* Lamarck, 1799, as a synonym of the name *Ammonia* Brünnich, 1771, a name never used till now since its publication in the *Zoologiae Fundamenta* 180 years ago. Few, if any, specialists will dispute the view expressed by Mr. Winckworth that, rather than permit this to happen, the International Commission should use its plenary powers to suppress the name *Ammonia* Brünnich. The only alternative would, as pointed out by Mr. Winckworth, be to select *Nautilus beccarii* Linnaeus, 1758, as the type species of this genus. Such action would inevitably mean the displacement of some later generic name in the Order Foraminifera, but no information is as yet available to the Commission as to the extent to which such a displacement would be open to objection.

53. There are thus two questions on which the advice of specialists is desired: (1) *Workers in the Class Cephalopoda* are asked to state their view on the question whether, in order to save the name *Spirula* Lamarck, 1799, it would be desirable to suppress the name *Ammonia* Brünnich, 1771, under the plenary powers if *Nautilus spirula* Linnaeus, 1758, were to be selected as the type species of Brünnich's genus. (2) *Workers in the Order Foraminifera* are asked to inform the Commission (a) in what genus the nominal species *Nautilus beccarii* Linnaeus, 1758, is currently placed, and (b) whether confusion would be likely to result if it were necessary to sink the name of that genus (whatever it may be) as a synonym of *Ammonia* Brünnich, 1771, through the nominal species *Nautilus beccarii* being selected as the type species of that genus.

**Case 23: The status to be accorded to the generic name
"Encrinus" Schulze, 1760, and the species to be accepted as its
type species (Class Crinoidea)**

(See 1950, *Bull. zool. Nomencl.* 4: 509-513)

(Commission's reference Z.N.(S.)434)

54. During its Session held in Paris in 1948 the International Commission on Zoological Nomenclature had under consideration an application submitted by Dr. Th. Mortensen (Copenhagen) for the validation of the generic name *Encrinus* Schulze, 1760, with *Encrinus liliiformis* Lamarck, 1801, as its type species (Class Crinoidea). This problem in 1909 (*Ann. Mag. nat. Hist.* (8)4;

37-42) had been discussed by the late Commissioner F. A. Bather. Later, it had been the subject of consultation between thirty-eight leading echinologists in all parts of the world prior to its being submitted to the Commission; as the result of this consultation thirty-four of the specialists in question gave their support for the foregoing proposal, one abstained, and three did not answer. Full particulars regarding this consultation were published in 1932 (Mortensen, 1932, *Ann. Mag. nat. Hist.* (10)10: 345-348). Later in the same year the present application was submitted to the Commission. Thus, at the time of the submission of this proposal, it enjoyed an overwhelming measure of support from the active workers in this group. Various circumstances made it impossible for the Commission to deal with this application prior to the outbreak of the World War in 1939, and in consequence it was not until its Paris Session that the Commission was able to take this proposal into consideration. By that date sixteen years had elapsed since the original submission of this application; the Commission accordingly took the view that, before a decision was taken on this application, it was desirable to ascertain from specialists whether any developments had occurred in regard to the usage of this name during the foregoing period which might affect the nature of the action which it was desirable should be taken.

55. In accordance with the foregoing decision, specialists in the Echinodermata, including those who took part in the consultation organised by Dr. Mortensen prior to the original submission of this application to the Commission, are requested to be so kind as to notify the Commission as soon as possible of their attitude to the proposal that the International Commission should now use its plenary powers to validate the generic name *Encrinus* Schulze, 1760, and to designate *Encrinus liliiformis* Lamarck, 1801, as its type species.

Case 24 : Proposed use of the plenary powers to suppress the generic name "Echinocrinus" Agassiz, 1841, and to validate the name "Archaeocidaris" McCoy, 1844 (Class Echinoidea)

(See 1950, *Bull. zool. Nomencl.* 4 : 514-516)

(Commission's reference Z.N.(S.)320)

56. The proposal that the International Commission on Zoological Nomenclature should use its plenary powers to suppress the generic name *Echinocrinus* Agassiz, 1841, for the purpose of validating the name *Archaeocidaris* McCoy, 1844 (Class Echinoidea) was one of seven cases submitted to the Commission by Dr. Th. Mortensen in 1932 jointly with that of *Encrinus* Schulze, 1760, discussed in paragraphs 54-55 above. As in the case of the name *Encrinus*, an extensive consultation between leading specialists in different parts of the world had taken place in regard to the proposed validation of the name *Archaeocidaris* McCoy, prior to the application in regard to that name being submitted to the Commission. Of the thirty-eight specialists who took part in that consultation thirty-five had supported the submission of this application to the Commission, one had expressed the view that *Archaeocidaris* McCoy,

1844, could be used without invoking the use of the plenary powers, while two had voted against the proposal on grounds unconnected with the merits of this particular case (see Mortensen, 1932, *Ann. Mag. nat. Hist.* (10) **10**: 345). As in the case of the name *Encrinus*, the Commission did not find it possible to deal with this proposal before the outbreak of the World War in 1939. After the close of that war, this application was advertised in 1947 in the serial publications "Science" and "Nature" as a case involving the possible use of the plenary powers. No objection to the action proposed was elicited as the result of this advertisement.

57. When the International Commission considered this application at its Session held in Paris in July, 1948, it took the view that a further consultation with specialists regarding the nature and extent of the confusion to be expected if the name *Echinocrinus* Agassiz were to be substituted for the name *Archaeocidaris* McCoy was desirable before a decision was reached on this application. In the original application to the Commission the thirty-five specialists who had joined in submitting this application had based their proposal on two grounds: (1) The name *Echinocrinus* had been given by Agassiz to the genus concerned in the mistaken belief that the fossil species included in it were crinoids; once it was established that these species were in fact Echinoids, the name *Echinocrinus* had become "absolutely misleading" and it was for this reason that this name had been dropped in favour of the thoroughly appropriate name *Archaeocidaris* McCoy; (2) All the main authorities who had published on this genus (Desor, Zittel, Jackson, Lambert & Thierry, Mortensen) had used the name *Archaeocidaris* and on this account also the substitution for that name of the name *Echinocrinus* Agassiz would be calculated to cause confusion. Of the foregoing arguments, clearly (1) remains as valid today as at the time when it was first advanced. Argument (2) would, however, have been impaired in its force if it could be shown that in the period 1932-1951 leading authorities had published important works in which they had used the name *Echinocrinus* Agassiz in place of the name *Archaeocidaris* McCoy, particularly if it could be shown that any of those authors who regarded this genus as the type genus of a family had changed the name of that family from ARCHAEOCIDARIDAE to ECHINOCRINIDAE.

58. In order that a final decision may be taken by the International Commission on this application with as little further delay as possible, specialists in the Echinoidea, including those specialists who took part in submitting the original application, are requested to be so kind as to notify to the Commission their views on the questions set out in the preceding paragraph in regard to the proposal that the plenary powers should be used to validate the use of the generic name *Archaeocidaris* McCoy, 1844, in place of the name *Echinocrinus* Agassiz, 1841.

Case 25 : On the proposed use of the plenary powers to suppress the generic name "Protoechinus" Austin, 1860, for the purpose of validating the name "Pholidocidaris" Meek & Worthen, 1869 (Class Echinoidea)

(See 1950, *Bull. zool. Nomencl.* 4 : 513.)

(Commission's reference Z.N.(S.)435)

59. The eighth of the nine applications for the use of the plenary powers in relation to generic names in the Class Echinoidea submitted to the International Commission in 1932 by Dr. Th. Mortensen (Copenhagen) after extensive consultation with Echinoid specialists was a request that the Commission should use its plenary powers to suppress the generic name *Protoechinus* Austin, 1860 (type species, by monotypy : *Protoechinus anceps* Austin, 1860) for the purpose of rendering available for this genus the name *Pholidocidaris* Meek and Worthen, 1869 (type species, by monotypy : *Lepidocentrus irregularis* Meek and Worthen, 1869). The point on which this application turned was at the time a novel one, namely whether a specific name could properly be brought into use, when the original published description was insufficient to permit of the identification of the species so named but where the holotype (or other type material) on which the nominal species in question was based was still available and it was in consequence possible to establish the identity of the species in question. In this particular case, the holotype of the nominal species *Protoechinus anceps* Austin was preserved and proved on examination by Bather (1918) to be a species of the genus which in 1869 Meek & Worthen had named *Pholidocidaris*, a name which in the intervening half century had become thoroughly established. It was for this reason that the thirty-one specialists by whom the application was submitted (see Mortensen, 1932, *Ann. Mag. nat. Hist.* (10)10 : 365-368) recommended the use of the plenary powers for the purpose of suppressing *Protoechinus* Austin, 1860, and validating *Pholidocidaris* Meek & Worthen, 1869.

60. Prior to the Session of the Commission held in Paris in 1948 Dr. Mortensen intimated that, in view of the greater importance which he attached to certain of the other applications submitted to the Commission concurrently with the present application, he was disposed to discontinue the application submitted in the present case. The Commission took the view, however, that, having regard to the wide publicity which had been given (through the publication in 1932 of the paper by Dr. Mortensen entitled "A Vote on some Echinoderm Names" referred to in paragraph 59 above) to the proposal that the plenary powers should be used in this case, it would not be appropriate to allow this application to lapse, the proper course in the case of an abandoned application for the use of the plenary powers being to place on the relevant *Official List* the names which in the abandoned application it had been asked should be suppressed under the plenary powers. Moreover, in the present case it had not then been possible to ascertain from the other specialists by whom the application had originally been submitted jointly with Dr. Mortensen whether it was their desire that the application should proceed as originally proposed. The Commission accordingly asked me to consult with the original

signatories to the present application and with other specialists in the Echinoidea as to which of the two possible courses it was desirable to adopt in this case.

61. Specialists in the Echinoidea are accordingly asked to notify the Commission as soon as possible as to which of the two following alternative courses they favour in the present case : *Course* (1). Under this course (which is that embodied in the original application) the name *Protoechinus* Austin, 1860, would be suppressed under the plenary powers and placed on the *Official Index of Rejected and Invalid Generic Names in Zoology*, while the name *Pholidocidaris* Meek & Worthen, 1869 (type species, by monotypy : *Lepidocentrus irregularis* Meek & Worthen, 1869) would be placed on the *Official List of Generic Names in Zoology*. *Course* (2). Under this course the original proposal would be abandoned, this decision being marked by the placing on the *Official List of Generic Names in Zoology* of the generic name *Protoechinus* Austin, 1860 (type species, by monotypy : *Protoechinus anceps* Austin, 1860). At the species name level the adoption of *Course* (1) would involve placing the trivial name *irregularis* Meek & Worthen, 1869 (as published in the combination *Lepidocentrus irregularis*) on the *Official List of Specific Trivial Names in Zoology*, while *Course* (2) would involve placing on the foregoing *Official List* the trivial name *anceps* Austin, 1860 (as published in the combination *Protoechinus*), the species so named to be identified by reference to Bather's paper of 1918 ; in each case, the foregoing action would be subject to the Commission being satisfied that the trivial name concerned is subjectively as well as objectively, the oldest available such name for the species concerned ; if in either case specialists were to consider that there was some older trivial name subjectively applicable to the taxonomic species concerned, it would be that older name and not the trivial name of the nominal species which is the type species of the genus in question which would be placed on the *Official List of Specific Trivial Names in Zoology*.

Case 26 : On the proposed use of the plenary powers to suppress the generic names "Eriechinus" Pomel, 1883, and "Typhlechinus" Neumayr, 1889, for the purpose of validating the name "Lovenechinus" Jackson, 1912 (Class Echinoidea)

(See 1950, *Bull. zool. Nomencl.* 4 : 513)

(Commission's reference Z.N.(S.)613)

62. Another application submitted to the International Commission on Zoological Nomenclature in 1932 by Dr. Th. Mortensen (Copenhagen) on his own behalf and that of a large group of specialists in the Echinoidea at the same time as the application regarding the name *Pholidocidaris* Meek & Worthen 1869, discussed in paragraphs 59-61 above, was an application asking for the use by the Commission of its plenary powers to suppress the generic names *Eriechinus* Pomel, 1883, and *Typhlechinus* Neumayr, 1889, for the purpose of validating the name *Lovenechinus* Jackson, 1912. According to the application submitted by Dr. Mortensen and the thirty other specialists concerned (Mortensen, 1932, *Ann. Mag. nat. Hist.* (10)10 : 365-368), the relevant facts of this

case are as follows: (1) Pomel in 1883 established a nominal genus to which he applied the name *Eriechinus* and of which he designated *Palaeechinus sphaericus* McCoy, 1844, as the type species; Pomel interpreted McCoy's *sphaericus* in the manner adopted by de Koninck in 1869. (2) Neumayr in 1889, being unaware of Pomel's (1883) action in establishing the nominal genus *Eriechinus*, himself established a nominal genus for the species which de Koninck (1869) had identified with *Palaeechinus sphaericus* McCoy, 1844, giving the name *Typhlechinus* to the new nominal genus so established. (3) In 1912 Jackson took the line that, as the nominal genera *Eriechinus* Pomel, 1883, and *Typhlechinus* Neumayr, 1889, were based upon erroneous observations and on an erroneous identification, these two generic names were "out of court as generic names." On the basis of this patently defective argument Jackson proceeded to erect the nominal genus *Lovenechinus* (with *Oligoporus missouriensis* Jackson, 1896, as type species). The applicants noted also that, prior to the publication of the name *Lovenechinus* Jackson, 1912, Bather had published the results of a re-examination of the specimen which de Koninck (1869) had identified as *Palaeechinus sphaericus* McCoy, 1844 (i.e. the specimen which Pomel (1883) and Neumayr (1889) had similarly identified when those authors respectively established the nominal genera *Eriechinus* and *Typhlechinus*); according to Bather's examination the specimen in question was referable not to *Palaeechinus sphaericus* McCoy (as de Koninck, Pomel and Neumayr had erroneously supposed) but to the species *Palaeechinus lacazei* Julien, 1896. In submitting this case to the Commission, the applicants accordingly considered the latter species to be the type species both of *Eriechinus* Pomel, 1883, and of *Typhlechinus* Neumayr, 1889; the applicants stated also that this species was, in their view, congeneric with *Oligoporus missouriensis* Jackson, 1912, the undoubted type species of *Lovenechinus* Jackson, 1912. According to this view, the name *Lovenechinus* Jackson, 1912, was a subjective junior synonym both of *Eriechinus* Pomel, 1883, and of *Typhlechinus* Neumayr, 1889. While fully accepting the validity of this conclusion, the applicants took the stand that "nothing at all would be gained by reintroducing" the older but little known name *Eriechinus* Pomel instead of the name *Lovenechinus* Jackson by which the genus concerned was referred to in the main literature of the group. Speaking of this case and that of *Pholidocidaris* (discussed in paragraphs 59-61 above), the applicants added: "On the contrary, introducing these older names would only result in trouble and further confusion." The applicants accordingly asked the International Commission on Zoological Nomenclature to validate the name *Lovenechinus* Jackson, 1912, with *Oligoporus missouriensis* Jackson, 1896, as type species.

63. Prior to the Session of the Commission held in Paris in 1942 Dr. Mortensen had intimated that, in view of the greater importance which he attached to certain of the other applications submitted to the Commission concurrently with the present application, he was disposed to discontinue the application submitted in the present case. In these circumstances the Commission did not examine the present application in detail; they took the view however that, having regard to the wide publicity which had been given (through the publication in 1932 of the paper by Dr. Mortensen entitled "A

Vote on some Echinoderm Names" referred to in paragraph 62 above) to the proposal that the plenary powers should be used in the present case, it would not be appropriate to allow the present application to lapse. The Commission accordingly decided that this case should be dealt with in the same manner as that which it had been agreed to adopt in regard to the name *Pholidocidaris* Meek & Worthen, 1869, that is, that either (1) the application should be granted and the names thus suppressed placed on the *Official Index of Rejected and Invalid Generic Names in Zoology*, the name *Lovenechinus* Jackson, 1912, being at the same time placed on the *Official List of Generic Names in Zoology*, or (2) the application should be rejected, the accepted name being placed on the *Official List* and names found to be objective junior synonyms on the *Official Index of Rejected and Invalid Names*. The Commission accordingly invited me, as its Secretary, to take up this case with specialists for the purpose of ascertaining the general wishes of echinologists in this matter.

64. As a preliminary to discharging the duty so entrusted to me, I re-examined the application submitted by Dr. Mortensen and his colleagues for the purpose of making sure that it was not affected by any of the decisions in regard to the *Règles* taken by the International Congress of Zoology at Paris in 1948. This examination showed at once that the situation was materially different in one important respect from that which the applicants had believed it to be when in 1932 they submitted this application to the Commission. It will be seen from the summary of this application given in paragraph 62 above that the basis of the case submitted was the belief that the generic name *Lovenechinus* Jackson, 1912 (the name which it was the object of the applicants to preserve) was invalid because the type species of the genus so named was subjectively congeneric not with the nominal species *Palaeochinus sphaericus* McCoy, 1844, the sole species cited by Pomel in 1883 when erecting the nominal genus *Eriechinus* and by Neumayr in 1889 when erecting the nominal genus *Typhlechinus* but with the species which, in the opinion of the applicants, Pomel and Neumayr had each been misled by the previous action of de Koninck in 1869 into misidentifying with that species. In other words, the case put forward by the applicants was that the nominal genus *Eriechinus* Pomel, 1883, and the objectively identical nominal genus *Typhlechinus* Neumayr, 1869, were both genera based upon misidentified type species and that, on the assumption that the type species of both those genera was the nominal species to which Pomel and Neumayr respectively had intended to refer and not the nominal species to which they did actually refer, the generic name *Lovenechinus* Jackson, was a subjective junior synonym of the generic names *Eriechinus* Pomel and *Typhlechinus* Neumayr.

65. At the time when the present application was submitted to the Commission the only guidance available to specialists as to the treatment to be accorded to the names of genera based upon misidentified type species was that afforded by the Commission's *Opinion* 65 (1924, *Smithson. Publ.* 2256 : 152-169), in which the Commission had given a ruling which implied that in the case of a genus falling in the foregoing class it was the nominal species actually cited which was normally to be accepted as the type species; the same subject was dealt with by the Commission at its Session held in Lisbon in 1935, the decision

then reached being later embodied in *Opinion* 168 (1945, *Opinions Decls. int. Comm. zool. Nomencl.* 2: 411-430). In that *Opinion* the general principle laid down in *Opinion* 65 was amplified and confirmed but the central issue, that is, what species should be accepted as the type species of a genus which specialists agreed was based upon a misidentified type species, still remained unsettled. This important question was considered exhaustively by the International Commission when in Paris it had under consideration the recommendation to be submitted to the International Congress of Zoology for the clarification of the rulings given in the foregoing *Opinions* as a preliminary to the incorporation of those rulings, so clarified, into the *Règles* themselves. The Commission then agreed to recommend (1950, *Bull. zool. Nomencl.* 4: 158-159) that words should be inserted in the *Règles* providing (1) that, subject to (2) below, the nominal species designated or indicated as the type species of a nominal genus at the time when the generic name in question is first published or, where no such species was either so designated or indicated by the original author, the species later selected to be the type species, is to be deemed to have been correctly identified by the original author of the generic name, but (2) that, where there are grounds for considering that the species in question had in fact been misidentified by the original author the case in question is to be submitted to the International Commission. On receiving such a case, the Commission, if satisfied that such a misidentification had occurred, is to use its plenary powers to designate as the type species of the genus either the species intended by the original author, when citing the name of the erroneously determined species, or, if the identity of that species is doubtful, a species in harmony with current nomenclatorial usage, except where the Commission is of the opinion that such a use of the plenary powers would result in greater confusion than uniformity. The recommendation so submitted by the International Commission was subsequently approved by the International Congress of Zoology. It is therefore in the light of the foregoing provision that the problem raised by the present application must be judged.

66. It is immediately evident that the problem now to be considered is totally different from that envisaged in the application submitted to the Commission: (1) It is the species to which the name *Palaecechinus sphaericus* McCoy, 1844, properly applies which would be the type species of *Eriechinus* Pomel, 1883 (and, therefore, also of *Typhlechinus* Neumayr, 1889) if it were not for the evidence brought forward by Dr. Mortensen and his colleagues that, following de Koninck (1869) Pomel (1883) and Neumayr (1889) misidentified the species to which they applied the *Palaecechinus sphaericus* McCoy, 1844, the species so misidentified being *Palaecechinus lucazei* Julien, 1896. (2) In view of the foregoing evidence of misidentification it is obligatory under the *Règles* that the question of the species to be recognised as the type species of *Eriechinus* Pomel (and *Typhlechinus* Neumayr) should be submitted to the International Commission for decision and on the submission of such an application it becomes the duty of the Commission to settle the above question. (3) If the Commission were to be satisfied that Pomel and Neumayr had each misidentified *Palaecechinus lucazei* Julien as *Palaecechinus sphaericus* McCoy, it would then be the duty of the Commission to use its plenary powers to designate *Palaecechinus lucazei* Julien to be the type species of both *Eriechinus*

Pomel, 1883, and of *Typhlechinus* Neumayr, 1889, unless it was satisfied that the designation of that species to be the type species of those genera would lead to confusion. But it was the whole point of the application submitted by Dr. Mortensen and his colleagues that it would be confusing to accept the above species as the type species of these genera (because to do so would make *Lovenechinus* Jackson, 1912, a subjective junior synonym of the above generic names) and it was for this reason that the foregoing applicants asked the Commission to suppress the above two generic names. If the Commission were to accept the view that it would be confusing to recognise *Palaeochinus lucazei* Julien as the type species of *Eriechinus* Pomel (and *Typhlechinus* Neumayr), the only other species which it would be possible for it to designate as the type species of these genera would be the true *Palaeochinus sphaericus* McCoy, 1844. According however to the application submitted to the Commission, the above species was then treated by specialists as belonging to another genus, namely *Maccoya* Pomel, 1883. If this is the taxonomic view still held by specialists, the position would be that *Eriechinus* Pomel, 1883, and *Maccoya* Pomel, 1883, are no more than different names for the same genus; both were published in the same work on the same date and, as *Eriechinus* has page precedence over *Maccoya*, it would replace that name, unless the Commission were to take steps to prevent this from happening.

67. It will be seen from the foregoing analysis first that the problem involved in the present case is one which can be resolved only by obtaining a decision from the Commission; second, that it would still be necessary to invoke the use of the plenary powers to suppress the generic names *Eriechinus* Pomel and *Typhlechinus* Neumayr unless it were felt that there would be no objection to the name *Eriechinus* Pomel replacing either (a) the name *Lovenechinus* Jackson, 1912 (which it was the purpose of the present application to avoid) or (b) the name *Maccoya* Pomel, 1883, a contingency which was not considered in the application submitted to the Commission.

68. In these circumstances, the questions on which the advice of interested specialists is sought are: (1) Would it be confusing to accept the true *Palaeochinus sphaericus* McCoy, 1844, as the type species of *Eriechinus* Pomel, 1883? If so, would the confusion be such as to call for the use of the plenary powers for the purpose of suppressing the name *Eriechinus* Pomel, 1883? (2) Would it be confusing to accept *Palaeochinus lucazei* Julien, 1896, as the type species of the genus *Eriechinus* Pomel (and of the genus *Typhlechinus* Neumayr)? If so, would the confusion be such as to call for the use of the plenary powers for the purpose of suppressing both the foregoing generic names? (3) If it is considered that neither of the foregoing results would lead to sufficient confusion to call for the use of the plenary powers, which of the only two remaining courses of action open to the Commission would be preferred (a) the designation by the Commission of *Palaeochinus sphaericus* McCoy, 1844, to be the type species of *Eriechinus* Pomel, 1883 (which, according to the information furnished in the application, would lead to *Maccoya* Pomel, 1883, falling as a junior synonym of *Eriechinus* Pomel, 1883), or (b) the designation by the Commission of *Palaeochinus lucazei* Julien, 1896, to be the type species of *Eriechinus* Pomel (in which case, according to the information furnished in the application,

Lovenechinus Jackson, 1912, would fall as a subjective junior synonym of *Eriechinus* Pomel, 1883)?

Case 27 : Question of the future status to be accorded to the generic name "Rosmarus" Brünnich, 1771 (Class Mammalia)

(See 1950, *Bull. zool. Nomencl.* 4 : 313)

(Commission's reference Z.N.(S.)614)

69. As already explained (in paragraphs 51-53 above, in the question put to specialists in regard to the future status which it is desirable should be accorded to the generic name *Ammonia* Brünnich, 1771, the International Commission on Zoological Nomenclature decided that an inquiry should be made regarding the wishes of specialists concerning the status to be accorded to each of the new names published in 1771 in Brünnich's *Zoologiae Fundamenta*. The name which has now to be considered under this decision is the name *Rosmarus* Brünnich, 1771.

70. The late Mr. R. Winekworth, by whom the application for a ruling as to the availability of new generic names published in the foregoing work was submitted to the International Commission, noted (Winekworth, 1945, *Bull. zool. Nomencl.* 1 : 115) that the nominal genus *Rosmarus* Brünnich had been established for *Trichechus rosmarus* Linnaeus, 1766 (= *Phoca rosmarus* Linnaeus, 1758). Actually, that species had been specified as the type species of this genus by Palmer as far back as 1904 (*N. Amer. Fauna* 23 : 612). We have here, however, to recall that the same species is the type species of the older nominal genus *Odobenus* Brisson, 1762, having been so selected by Merriam, 1895 (*Science* (n.s.) 1(14) : 375). If the name *Odobenus* Brisson, 1762, were unquestionably an available name, the name *Rosmarus* Brünnich, 1771, would be an objective junior synonym, and no further question would arise regarding the future disposal of that name. But the status of the name *Odobenus* Brisson cannot at present be regarded as firmly established, for the book in which it was published—the Second (1762) edition of Brisson's *Regnum animale*—cannot be regarded as a strictly binominal work in the ordinary sense of that term and the question of the status to be accorded to names published in it is at present before the International Commission, on an application submitted by Dr. G. H. H. Tate (American Museum of Natural History, New York) (see paragraphs 26 and 27 of the present Report; also Tate, 1945, *Bull. zool. Nomencl.* 1 : 115; and Official Record of the Proceedings of the International Commission at its Session held in Paris in 1948, published in 1950, *Bull. zool. Nomencl.* 4 : 313-314).

71. In order, in accordance with the decision taken in Paris, to determine the future status of the name *Rosmarus* Brünnich, 1771, it will be necessary to consider the position which would arise if, on considering the application submitted by Dr. Tate, the Commission were to reach the conclusion that in the foregoing work Brisson did not satisfy the requirements of Proviso (b) to Article 25 and therefore that no name which appeared in that work possesses

any status in zoological nomenclature in virtue of having been so published. In that event, it would become incumbent upon the Commission, under the instructions in regard to such cases given by the Thirteenth International Congress of Zoology (Paris, 1948) (see 1950, *Bull. zool. Nomencl.* **4**: 65), to apply to Brisson's *Regnum animale* the procedure which in Paris they applied to Geoffroy's *Histoire abrégée des Insectes qui se trouvent aux Environs de Paris* (see paragraphs 9 and 10 of the present Report), that is to say, to ascertain from specialists whether they were of the opinion that, in order to avoid confusion and in the interests of nomenclatorial stability, it was desirable that certain of the generic names first published in 1762 in the *Regnum animale* should be validated and, if so, which were the names which it was desirable should be so preserved. In view of the fact that, as already explained, the Commission has decided to give a ruling on the future status to be accorded to the generic name *Rosmarus* Brünnich, 1771, the question of the status of the name *Odobenus* Brisson, 1762, is already directly involved and calls for decision by the International Commission.

72. The questions on which the advice of mammalogists is sought in the present case are therefore: (1) If it were to be decided by the International Commission that Brisson's *Regnum animale* of 1762 is not a nomenclatorially available work, would it be desirable that, under the special procedure prescribed by the International Congress of Zoology for adoption in such cases, the International Commission on Zoological Nomenclature should validate the generic name *Odobenus* Brisson, 1762 (type species: *Phoca rosmarus* Linnaeus, 1758)? (2) If the answer to the foregoing question is "No," is the generic name *Rosmarus* Brünnich, 1771, the next name validly published for, and therefore, if *Odobenus* Brisson, 1762, were found not to be an available name, the oldest such name for the genus containing the Walrus?

Case 28 : Question of the species to be treated as the type species of the nominal genus "Chinchilla" Bennett, 1829 (Class Mammalia)

(See 1950, *Bull. zool. Nomencl.* **4**: 436-441)

(Commission's reference Z.N.(S.)141)

73. During the War of 1939-45, the late Dr. Wilfred H. Osgood (Chicago) submitted an application asking for a ruling from the International Commission on Zoological Nomenclature as to the species to be treated as the type species of the genus *Chinchilla* Bennett, 1829 (Class Mammalia). Dr. Osgood pointed out that Bennett had established the nominal genus *Chinchilla* for a single species, namely the Chilean species (or subspecies) of the true Chinchilla. Bennett had not however given a new name to that species but had applied to it the name *Mus laniger* Molina, 1782, calling it *Chinchilla lanigera*. Prell (1934) had however come to the conclusion that the species described by Molina was not the true "Chinchilla" but was the so-called "False Chinchilla" or "Chinchilla Rat," a species which was currently placed in the genus *Abrocoma* Waterhouse,

1837, and did not even belong to the same family as the true "Chinchilla." Dr. Osgood had expressed the opinion that, if it were necessary to accept the "Chinchilla Rat" instead of the true "Chinchilla" as the type species of the genus *Chinchilla* Bennett, long-continued confusion of technical and vernacular names would be inevitable. These difficulties would, however, be completely avoided if it were possible to set aside the claim of the name *Mus laniger* Molina, 1782, to be taken into account in considering the question of the type species of the genus *Chinchilla* Bennett; if that name were to be ruled out in this way, the oldest name definitely given to the animal on which Bennett had based his genus, i.e. the true "Chinchilla" from Chile, was *Chinchilla velligera* Prell, 1934.

74. This case was carefully considered by the International Commission on Zoological Nomenclature at its Session held in Paris in 1948. In this matter the Commission was assisted by a decision then taken by the Thirteenth International Congress of Zoology (on the recommendation of the Commission) that an author who establishes a new nominal genus is to be deemed to have identified correctly the nominal species assigned by him to that genus but that, where there are grounds for believing that a misidentification of the type species did in fact occur, the case is to be submitted to the International Commission which, under this decision, is bound to give a ruling as to the species to be accepted as the type species of the genus concerned; where the Commission is satisfied that a misidentification has occurred, it is placed under an obligation to designate as the type species of the genus the species intended by the original author or, if the identity of that species is doubtful, a species in harmony with current nomenclatorial practice, unless it is satisfied that such action would itself lead to greater confusion than uniformity (1950. *Bull. zool. Nomencl.* **4**: 158-159).

75. Guided by the foregoing decision by the Congress, the Commission agreed that, under the *Règles* (i.e. unless the plenary powers were invoked to vary the normal provisions) the type species of the nominal genus *Chinchilla* Bennett, 1829, was the nominal species *Mus laniger* Molina, 1782, whatever that species might be. Next, the Commission took note that the trivial name *laniger* Molina, 1782 (as published in the foregoing binominal combination) was variously regarded by specialists (a) as a *nomen dubium* (Osgood's view), (b) as the oldest available name for the true "Chinchilla" of Chile (Herschkovitz's view), or (c) as the oldest available name for the "False Chinchilla" (Chinchilla Rat) (i.e. the species commonly referred to the genus *Abrocoma* Waterhouse, 1837, to which the trivial names *bennetti* and *cuvieri* had been given by Waterhouse when he first published the name *Abrocoma*) (Prell's view). Next the Commission agreed that, before a decision could be taken on the question whether it was necessary to use the plenary powers in order to prevent the confusion in technical and vernacular names which would arise, if, under the normal operation of the *Règles*, it were necessary to substitute the "Chinchilla Rat" (*bennetti* Waterhouse, 1837) for the true "Chinchilla" of Chile (*velligera* Prell) as the type species of the genus *Chinchilla* Bennett, 1829, it was essential, if possible, to determine the identity of the taxonomic

species to which the trivial name *laniger* Molina, 1782 (as published in the combination *Mus laniger*) properly applies.

76. Having reached this stage, the International Commission invited me, as its Secretary, to confer with interested specialists with a view to ascertaining as rapidly as possible (a) their views on the alternative interpretations of the trivial name *laniger* Molina, 1782, specified above, and (b), in so far as specialists regarded the above name as having been originally applied to a composite species, the views of specialists on the question of the first occasion on which a later author, acting under Article 31, as clarified and amplified in 1948 by the Paris Congress (1950, *Bull. zool. Nomencl.* **4**: 73-76), had definitely selected one of the comprised species to be the species to which the trivial name *laniger* Molina, 1782, should exclusively adhere. Finally, the Commission decided to defer further consideration of the late Dr. Osgood's application until the Report asked for had been received.

77. In order that a decision may now be taken on this case, the Commission desires to obtain from specialists information regarding, and advice on, the following questions:—

- (1) Is there now general agreement among specialists either (a) that the trivial name *laniger* Molina, 1782 (as published in the combination *Mus laniger*) was applied by its original author exclusively to the true Chinchilla of Chile or (2), if there is no such general agreement, is it generally agreed (a) that the nominal species *Mus laniger* Molina, 1782, was a composite species comprising (amongst other species) the true Chinchilla of Chile and (b) that that species was the first of the originally comprised species to be selected by a later author under Article 31 to be the species to which the trivial name *laniger* should exclusively adhere? (It will be particularly appreciated if specialists furnishing answers to the Commission on the above questions will support those answers with bibliographical references to papers bearing on the above matters.)
- (2) If the answer to the above questions is "No" (i.e. if there is no general agreement among specialists either that the true Chinchilla of Chile was the sole species to which Molina applied the name *Mus laniger* in 1782 or that, although the nominal species *Mus laniger* Molina was a composite species at the time when it was first published, it did then comprise the true Chinchilla of Chile and that species was duly selected under Article 31 as the species to which the name *laniger* Molina is exclusively to adhere), the present case falls to be dealt with under the decision taken, on the advice of the International Commission, by the Thirteenth International Congress of Zoology as recorded in the *Official Record of the Proceedings of the International Commission* at its Fourth Meeting held during its Paris Session, Conclusion 11(2)(g) (3) (see 1950, *Bull. zool. Nomencl.* **4**: 76). Under that decision it is provided that, where some specialists claim to be able to recognise the species to which a given specific name applies but other specialists either recognise some other species or are unable to recognise any species, the specific name in question becomes a

nomen dubium and the interpretation of that name is to be referred to the Commission for decision. If, for the reason explained above, it becomes the duty of the Commission to decide to which species the trivial name *laniger* Molina, 1782, shall be applied, is it the wish of specialists that the Commission should (a) direct that the foregoing name shall be held to apply to the true Chinchilla of Chile or (b) that that name should be suppressed under the plenary powers, the oldest available name for the true Chinchilla thus becoming *Chinchilla velligera* Prell, 1934 (without prejudice to the taxonomic question whether that Chinchilla is congeneric with some other Chinchilla having an older available name) ?

- (3) In view of the doubts which have for so long surrounded the question of the identity of the taxonomic species represented by the nominal species *Mus laniger* Molina, 1782, it will be essential if that name is to be preserved, for the International Commission, when placing (as it will be bound to do) the trivial name *laniger* Molina, 1782, on the *Official List of Specific Trivial Names in Zoology*, to insert at the same time a note in that *List* directing the manner in which that name is to be interpreted. In this connection it must be borne in mind that, if the next International Congress of Zoology (Copenhagen, 1953) decides to recognise the concept "neotype" (a subject on which a Report has been asked for for submission to that Congress*), the citation now of a previously published description or figure in the *Official List* for the purpose of prescribing the species to which the name *laniger* Molina, 1782, is to apply will inevitably mean that the specimen on which that description or figure was based will automatically become the neotype of the nominal species *Mus laniger* Molina, 1782. What is the published description or figure which specialists would in these circumstances recommend should be cited in the entry in the *Official List* relating to the trivial name *laniger* Molina ? Would the citation of a reference to Prell's (1934) description of *Chinchilla velligera* be considered suitable for this purpose (it being understood, as explained above, that Prell's specimen would automatically become the neotype of this species if the Congress decides in favour of the recognition of the neotype concept) ?

78. When the late Dr. Osgood first submitted the present application to the Commission a few months after the outbreak of the War of 1939-1945, he expressed the view that a decision was desirable at the earliest possible moment ; the war and other circumstances have already led to considerable delay in the consideration of this case, and the Commission is most anxious to reach a decision with as little further postponement as possible. Specialists who are interested in the problem raised in the present case will therefore greatly assist the Commission if they will be so kind as to furnish the Commission as soon as possible with their views on the three questions set out above

* In this connection see pp. 131-147 of the present Volume.

**Particulars of the dates of publication of the several Parts in
which the present Volume was published**

<i>Part No.</i>	<i>Contents of Part (pages)</i>	<i>Date of Publication</i>
1/2	1-60	25th February, 1952
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VOLUME 6

The publication of Volume 6, which is concerned with individual nomenclatorial problems, was interrupted to permit of the publication of Volume 7, which is concerned exclusively either with general problems of nomenclature which will be considered by the Fourteenth International Congress of Zoology, Copenhagen, 1953, or with particular problems specifically remitted by the International Commission on Zoological Nomenclature for special investigation. Now that the publication of Volume 7 is complete, the publication of Volume 6 is being immediately resumed. Part 5 of that Volume is being published concurrently with the present (concluding) Part of Volume 7.

IMPORTANT NOTICE

In order to save unnecessary work and to avoid unnecessary delay, specialists proposing either to submit applications to the International Commission or to furnish comments on applications by other authors published in the *Bulletin of Zoological Nomenclature* are particularly asked to submit those applications or to furnish those comments (1) typewritten on one side of the page only, double-spaced and with wide margins, and (2) in duplicate. Where comments are furnished on more than one application, each comment should be typed on a separate page.

All communications relating to the scientific work of the International Commission should be addressed to Francis Hemming, C.M.G., C.B.E., Secretary to the International Commission on Zoological Nomenclature, 28, Park Village East, Regent's Park, London, N.W.1, England.

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